CATYLIS PROPERTIES PTY LTD
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TRANSPORT, TRAFFIC & PARKING IMPACT ASSESSMENT
REDEVELOPMENT OF KOLOTEX & LABELCRAFT SITES
22 & 30-40 GEORGE STREET LEICHHARDT

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EXECUTIVE SUMMARY

This traffic impact assessment of the proposed mixed residential and commercial development at 22 & 30-40 George Street, Leichhardt has taken into consideration the vehicular / pedestrian / cyclist access and integration as well as the internal / external traffic impacts, on site parking provision and loading / servicing requirements.

The site is currently occupied as an industrial warehouse / factory with surrounding residential and smaller warehouse developments. The proposed type and scale of the development is appropriate given the significant proximity and choice of public transport. The ground level layout is purposely designed to allow free and easy pedestrian and cyclist movement through and around the site, aiding in future site residents and the surrounding local residents, particularly given the future light rail location and retail hub of Leichhardt Market Place.

Numerous bus routes surround the site within 400m while train services are nearby to the south within 1km. The proposed new light rail extension from Lilyfield to Dulwich Hill diversifies the existing public transport infrastructure and its connection to other town centres and locations. The new extension will include a designated stop at Taverners Hill which, upon completion, is expected to be within 500m walking distance to the site.

The parking provision for the site has been strategically allocated to allow for the good public transport connections. The parking provision of 280-360 car parking spaces complies with Leichhardt Council's DCP while also within the Roads & Maritime Services parking range. The parking range will maintain the current low private car usage, as per the Census, while also meeting current market demand. Additionally, the quantum of bicycle parking will aid in promoting a greater mode share. Parking is provided over two levels with majority of the parking quantum located in the single level basement.

The approved DA for increased industrial use of the existing site can generate significantly greater volumes of traffic. The proposed development yields lower traffic generation figures as well as lower heavy vehicle usage around the site which is a desirable outcome for the proposed development and local precinct. As outlined, the sites locality to public transport will lower private vehicle movements and the sites impact on the surrounding road network. The assessed traffic generation has been accommodated by the surrounding intersections with no significant adjustments to LoS performances. The proposed site ingress and egress arrangements aid in protecting residential amenity.

1 INTRODUCTION

M^CLaren Traffic Engineering was commissioned by Catylis Properties Pty Ltd on behalf of KGS (Vic) Pty Ltd to undertake a transport, traffic and parking assessment for proposed redevelopment of the existing Kolotex and Labelcraft sites at 22 & 30-40 George Street, Leichhardt.

The proposed development of the site will consist of the following components:

- 334 mixed apartments approximately
- Commercial office space of approximately 1,900m^2
- Ground level parking and one (1) level of basement carpark
- Parking supply of 280-360 car parking spaces

The proposed plans and layout are reproduced in **Annexure A** for reference.

Additionally, the adjacent land plot of 10-12 George Street, Leichhardt (corner of George Street & McAleer Street) has been included as part of the assessment and will be under a separate rezoning application from the Department of Planning and Infrastructure and not part of the Urbis Planning Proposal submission. The separate rezoning application is intended to achieve a Floor Space Ratio (FSR) of 2:1.

It should be noted that M^CLaren Traffic Engineering are familiar with the site which conducted a similar assessment in 2011.

1.1 State Environmental Planning Policy (Infrastructure) 2007 Requirements

The subject proposal qualifies as a development with relevant size and capacity under Clause 104 of SEPP (Infrastructure) 2007. Accordingly, the proposal requires formal referral to the Roads and Maritime Services (RMS) for consideration and input. Correspondence from the RMS can be binding on the DA.

Additionally, it is noted the site is within the Local Government Area (LGA) of Leichhardt Council.

2 EXISTING CONDITIONS

2.1 Site Location

The site is located to the north of Parramatta Road as shown in **Figure 9 & 10**. The site is an existing factory/warehouse which is currently active with short term tenants leasing the premises. The subject land has three road frontages being Upward Street to the west, M^CAleer Street to the south and George Street to the east.

Leichhardt Market Place is located further to the north on Lords Road while Kegworth Public School is nearby to the north west on Tebutt Street.

2.2 Road Hierarchy

The characteristics of roads near to the proposal site are described below.

Upward Street:

- Local road approximately 6.4m in width kerb to kerb
- Narrow two way street with garage accesses on either side of the street to the predominant industrial area
- Kerbside parking permitted on the western side of the roadway
- Signposted speed limit of 50km/h applies and is reduced to 40km/h to the north during school zone periods

M^CAleer Street:

- Local road approximately 6.5m in width kerb to kerb
- Narrow two way street with garage accesses on either side of the street to the predominant industrial area
- Kerbside parking permitted on the northern side of the roadway
- Signposted speed limit of 50km/h applies

George Street:

- Local road approximately 8m in width kerb to kerb
- Two lanes for two way passing (not linemarked) with access to industrial and residential area
- Kerbside parking permitted on the both sides of the street
- Signposted speed limit of 50km/h applies

Treadgold Street:

- Local road approximately 6.1m in width kerb to kerb
- Kerbside parking permitted on one side of the street, leaving 4m lane for passing
- Signposted 50km/h speed limit applies
- Footpaths on both sides of the street

Parramatta Road:

- Arterial STATE road with 20m wide carriageway.
- Generally 5 to 6 lanes for traffic movement
- Restricted kerb side parking permitted in some locations
- 60km/h sign posted speed limit

Tebbutt Street:

- Collector road approximately 13m in width kerb to kerb
- Two lanes for two-way traffic (one in each direction) with residential access being served by the street
- Kerbside parking permitted on either side of the road
- Signposted speed limit of 50km/h applies with school zone speed restrictions applied along some segments of the road

Flood Street:

- Collector road approximately 12.1m in width kerb to kerb
- Two lanes for two-way traffic (one in each direction) which serves the residential area
- Kerbside parking permitted on either side of the road measured approximately 2.1m in width
- Designated on road bicycle lane on both sides of the carriageway measured approximately 1.45m in width
- Signposted speed limit of 50km/h applies

Lord Street:

- Local road approximately 12m in width kerb to kerb
- Two lanes for two-way traffic (one in each direction)
- Kerbside parking permitted on either side of the road
- Leichhardt Market Place has direct access onto Lord Street
- Signposted speed limit of 50km/h applies

2.3 Existing Traffic Parking Conditions

The prevailing traffic management within the vicinity of the site includes:

- Traffic Signals at the junctions of:
  - Parramatta Road / Flood Street.
  - Tebbutt Street / Lords Road.
  - Marion Street / Foster Street.
  - Marion Street / Flood Street.
- Roundabout control at the intersection of Flood Street with Lords Road.
- Pedestrian Signals at the junction of Parramatta Road with Tebbutt Street.
- Priority control at all other nearby intersections.
- Bus stops along Parramatta Road and Marion Street.

- 50km/h speed zoning on all nearby local roads. 60km/h for both Parramatta Road and Marion Street.
- 40km/h school zone operating within the influence of Kegworth Public School and accordingly along part of the Upward Street frontage to the subject site.
- Speed humps along Upward Street to the north of the site.
- Concrete median along Parramatta Road, restricting vehicular access to left turn entry and exit movements to and from Upward Street, George Street and Tebbutt Street.
- No right turn from Parramatta Road to Flood Street northbound.

2.4 Existing Intersection Performance

Traffic surveys where commission upon the direction of M^CLaren Traffic Engineering on Thursday 13th September 2012 at the following intersections:

1. Tebbutt Street/Parramatta Road signals
2. Upward Street/Parramatta Road junction
3. George Street/Parramatta Road junction
4. Flood Street/Parramatta Road signals
5. Marion Street/Flood Street signals
6. Lords Road/Flood Street roundabout
7. Treadgold Street (south)/ Flood Street junction
8. Lords Road/Tebbutt Street signals
9. Marion Street/Tebutt Street signals
10. Upward Street/Lords Road junction

The results of these surveys are presented in **Annexure B** for reference. The respective intersections were assessed using SIDRA INTERSECTION 5.1 with the results summarised in the table below.

TABLE 1: EXISTING INTERSECTION PERFORMANCES

Intersection	Peak Hour	Degree of Saturation[1]	Average Delay[2] (sec/vehicle)	Level of Service[3]	Control Type	Worst Movement
Tebbutt St / Parramatta Road	7:30-8:30AM	>1	>70	F	Giveway/yield	Left turn from Tebutt
	4:45-5:45PM	0.51	3.8 (24.9)	A (B)	Giveway/yield	Left turn from Tebutt
Upward St / Parramatta Road	7:30-8:30AM	0.54	0.2 (22.8)	A (B)	Giveway/yield	Left turn from Upward
	4:30-5:30AM	0.19	0.2 (9.1)	A (A)	Giveway/yield	Left turn from Upward
George St / Parramatta Road	7:30-8:30AM	0.54	0.2 (22.6)	A (B)	Giveway/yield	Left turn from George
	4:30-5:30AM	0.19	0.1 (9.1)	A (A)	Giveway/yield	Left turn from George
Flood St / Parramatta Road	7:30-8:30AM	0.89	30.8	C	Signals	-
	4:15-5:15PM	1.0	52.2	D	Signals	-
Marion St / Flood St	8:00-9:00AM	0.91	32.1	C	Signals	-
	5:00-6:00PM	0.91	31.3	C	Signals	-
Lords Rd / Flood St	8:45-9:45AM	0.35	8.4 (10.0)	A (A)	Roundabout	Right turn from Lords
	4:45-5:45PM	0.38	8.4 (10.0)	A (A)	Roundabout	Right turn from Lords
Treadgold St (south) / Flood St	8:00-9:00AM	0.13	1.3 (8.6)	A (A)	Giveway/yield	Right turn from Treadgold
	5:00-6:00PM	0.14	1.4 (9.0)	A (A)	Giveway/yield	Right turn from Treadgold
Lords Rd / Tebbutt St	8:30-9:30AM	0.83	28.5	C	Signals	-
	4:15-5:15PM	0.74	20.2	B	Signals	-
Marion St / Tebutt St	7:15-8:15AM	>1	>70	F	Signals	-
	5:00-6:00PM	>1	>70	F	Signals	-
Upward St / Lords Rd	8:15-9:15AM	0.32	1.3 (6.6)	A (A)	Giveway/yield	Right turn from Upward
	4:45-5:45PM	0.18	1.7 (9.1)	A (A)	Giveway/yield	Right turn from Upward

NOTES:
(1) Degree of Saturation is the ratio of demand to capacity for the most disadvantaged movement.
(2) Average delay is the delay experienced on average by all vehicles.
(3) Level of Service is a qualitative measure of performance describing operational conditions. There are six levels of service, designated from A to F, with A representing the best operational condition and level of service F the worst. The LoS of the intersection is shown in bold.

Table 1 above shows the existing intersection performances of the surrounding road network. The intersections of Tebbutt Street / Parramatta Road, Flood Street/Parramatta Road are operating at or near capacity while the intersections of Upward Street/Parramatta Road and George Street / Parramatta Road are operating satisfactorily with delays experienced by the minor road. While some movements from the minor roads onto Parramatta Road experience delays it does not reflect the overall performance of the intersection, given the low volume of turning vehicles and priority is to be maintained to the arterial road.

2.5 Existing Parking Surrounds

In conjunction with the above traffic surveys, parking surveys where recorded during the same periods. The survey data is provided in **Annexure C** for reference.

In summary the precinct surveyed has a total supply of 405 parking spaces bound from Parramatta Road to the south, Flood Street to the east, Marion Street to the north and Tebutt Street to the west. Of this parking supply, a peak of 316 and 321 occupied spaces were recorded during the AM and PM peak respectively. This represents 78% and 79% occupancy during the AM and PM peak period respectively.

Additionally, attention was also focused on the nearby Kegworth Public School parking utilisation in Tebutt Street, Upward Street and Lords Road. These parking results are also presented in **Annexure C**.

Minimal parent usage was recorded in Tebutt Street and Upward Street while Lords Road was utilised the most. It is envisaged that the proposal will not affect the schools operation.

2.6 Public Transport

The site is located in close proximity to regular bus services operating on Parramatta Road and Marion Street. Existing bus stops are within comfortable walking distances to and from the site with an extract of the Sydney Buses route map shown in **Figure 1** along with bus stop locations in **Figure 2**.

Concrete and/or bitumen paved footpaths exist along all nearby roads connecting to the surrounding precinct including Leichhardt Market Place, Parramatta Road and nearby bus stops.

The nearby Summer Hill, Lewisham and Petersham Railway Stations are located within close proximity to the subject site (walking distance of 0.9-1.4km).

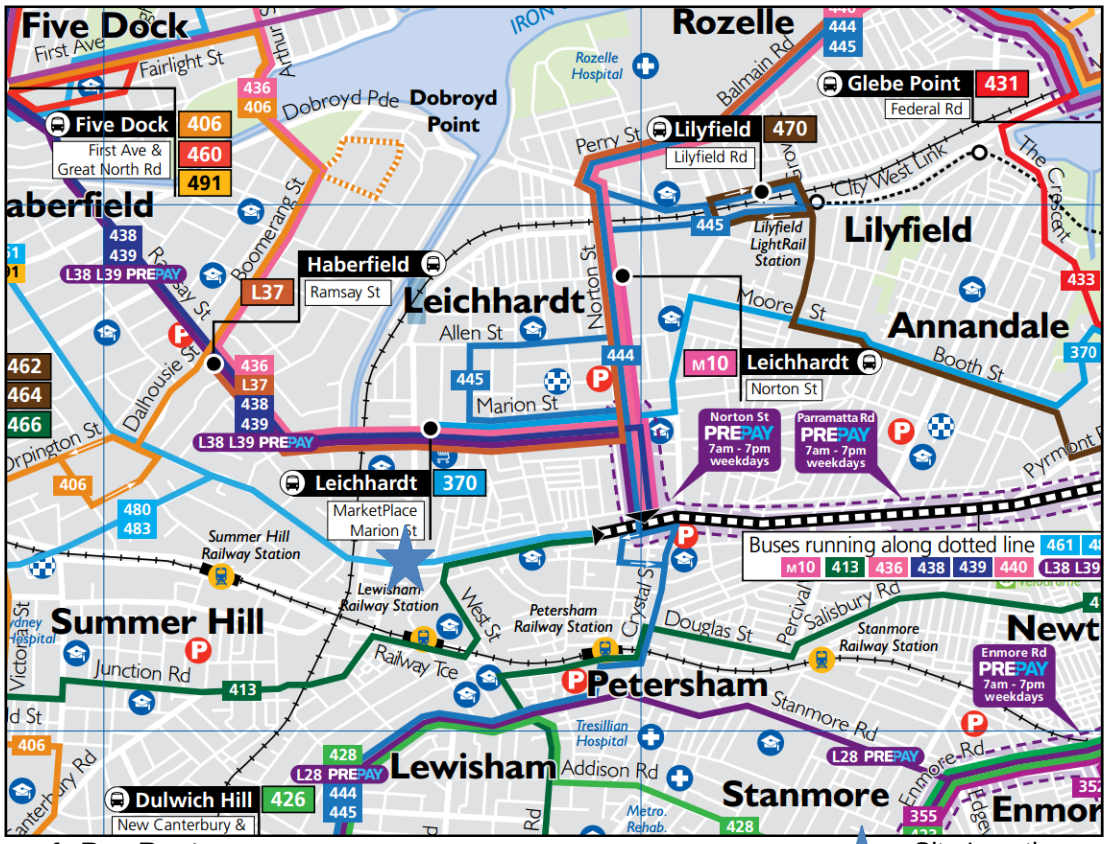


Figure 1: Bus Routes

★ Site Location

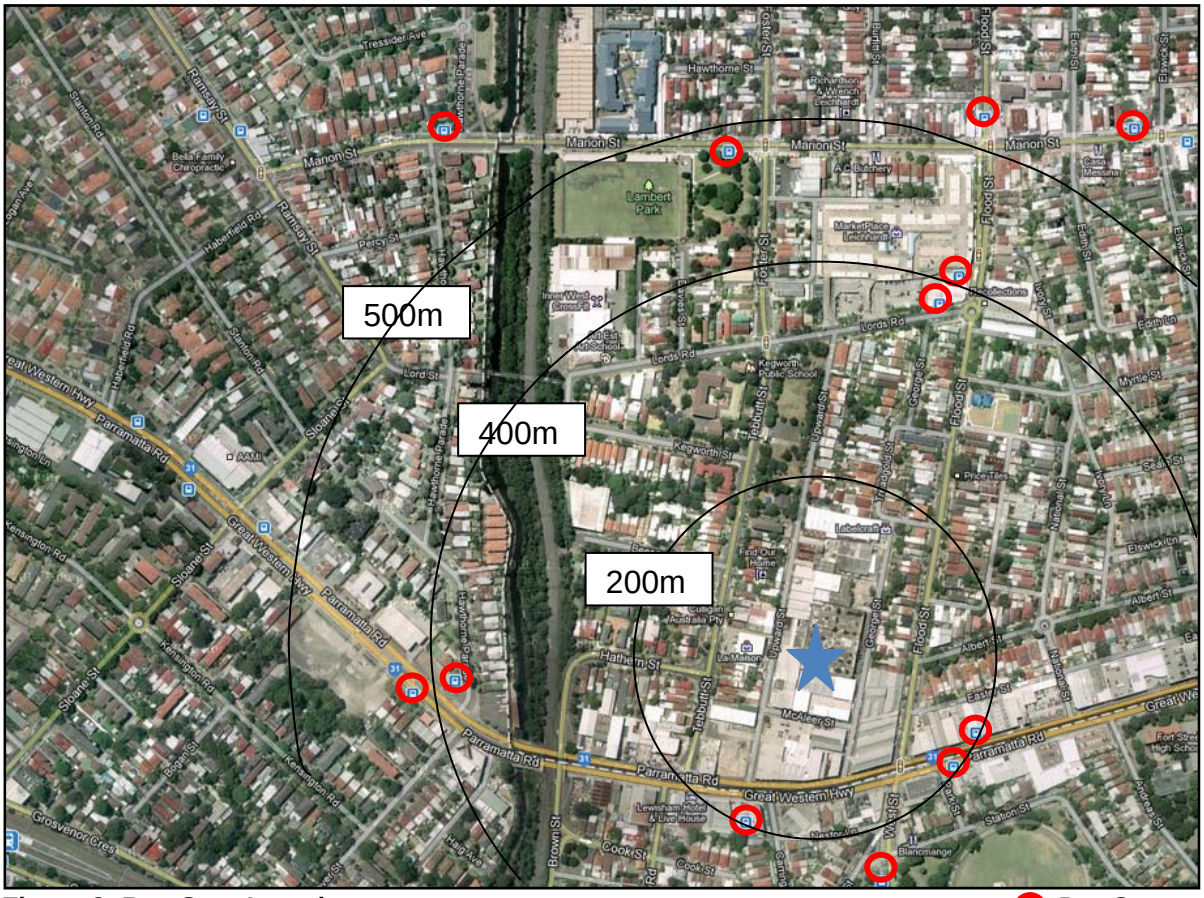


Figure 2: Bus Stop Locations

Bus Stop

3 TRAVEL CHARACTERISTICS

3.1 Leichhardt Travel Profile

Information obtained from the Census Journey to Work statistics for the Leichhardt area as in **Table 2 & 3** below.

TABLE 2: 2006 CENSUS JOURNEY TO WORK

Main Mode	Leichhardt
Bicycle	1.6
Bus	20.5
Car as Driver	43
Car as Passenger	3.9
Did not go to work	8.3
Ferry/Tram	3.3
Motorbike/ scooter	0.9
Not stated	1.2
Taxi	0.8
Train	3.9
Truck	0.5
Walked only	5.5
Worked at home	5.5
Other	1.0
Total	**100%**

Car usage for the Leichhardt area is lower than that compared to other Southern Sydney Regional Organisation Councils which is 47.4% as a car driver and 4.7% as a car passenger. Additionally, since 2001 (the last available Census data before 2006), car usage has slightly decreased while walking and cycling has increased. The availability of public transport is also highlighted in the above table with over 20% of people utilising buses as their travel mode.

TABLE 3: 2006 CENSUS JOURNEY TO WORK

Direction	Proportion (%)
Sydney Inner	26.4
Sydney West	6.8
Sydney North	4.7
Sydney South	2.9
Sydney East	4.2
Leichhardt	17.6
Ryde	3.5
Willoughby	2.4
Marrickville	2.2
Parramatta	1.9
Botany Bay	1.7
Randwick	1.4
Auburn	1.3
Canada Bay	1.0
Woollahra	1.0
Other	21
Total	**100%**

A significant amount of Leichhardt residents work in Sydney City which has high levels of public transport. The second largest workplace is within the Leichhardt LGA.

This travel profile outlines the importance of maintaining good accessibility to public transport and travel modes other than private car. Incorporating bicycle facilities in a development as well as implementing transit oriented development means reducing private car usage in Leichhardt.

3.2 Bicycle Network

Leichhardt Council's bicycle strategy is to produce an environment where cycling is the easiest and the best, most enjoyable and convenient way to get about. The bicycle strategy reflects the key design principals in bicycle transport systems and current government planning policies. Currently, there are on road bicycle lanes on Flood Street and Marion Street.

Two key targets of the bicycle strategy is i) double the rate of (commuter and local) cycling in five years and ii) provide cycle parking in public areas throughout the Leichhardt LGA for 500 bicycles in five years.

Below is a cycle network map of the Leichhardt LGA (**Figure 3**).

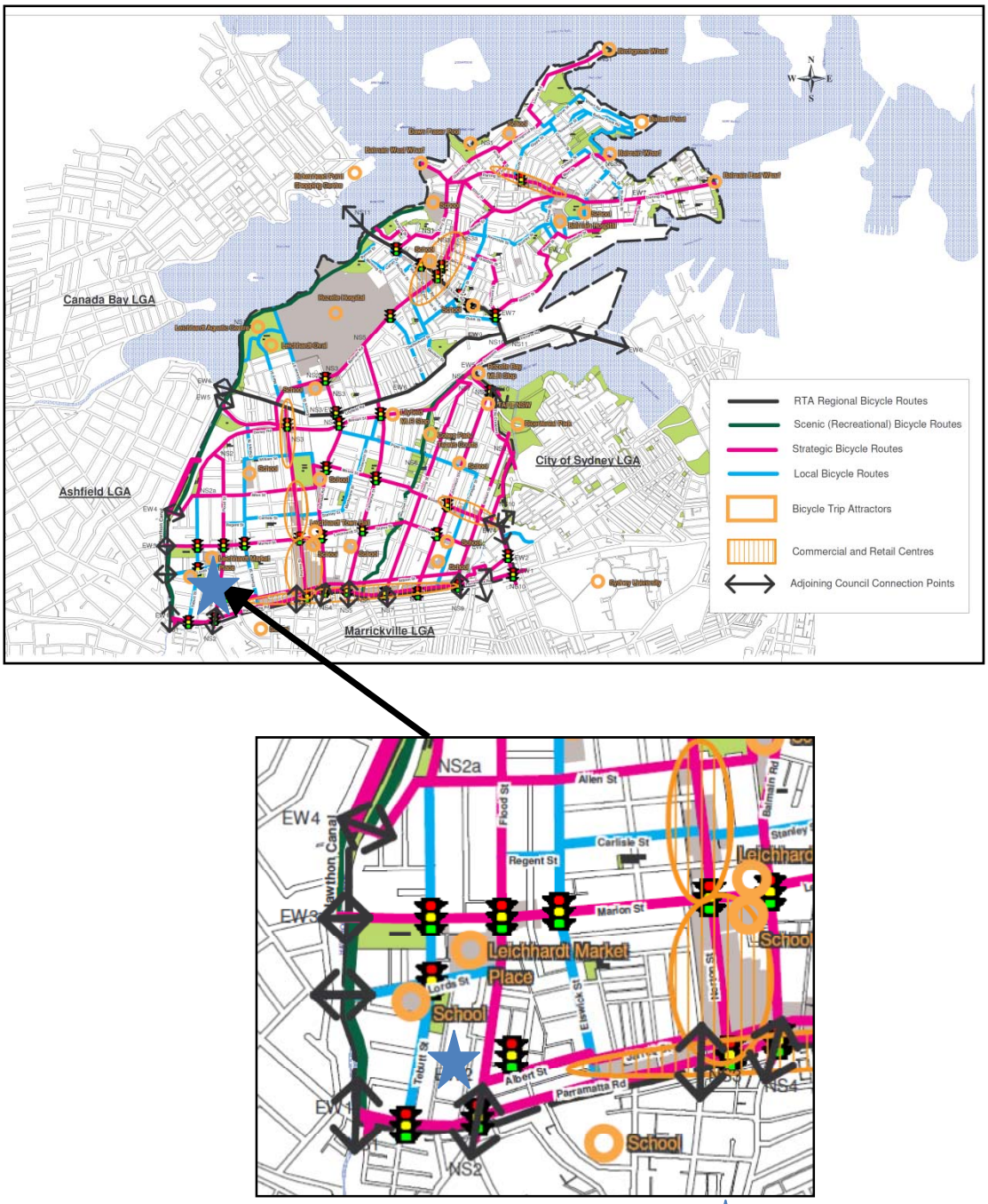


Figure 3: Bicycle Network ★ **Site Location**

4 FUTURE ROAD AND INFRASTRUCTURE UPGRADES

The planned infrastructure of the future light rail will further act to reduce private car travel particularly during commuter peaks

It is highlighted that a light rail extension is planned to link the existing Lilyfield Light Rail stop to Dulwich Hill with an interchange at the train station. The stops along the route are shown below and include Leichhardt North, Hawthorne Reserve, Marion Street, Taverners Hill, Lewisham West, Waratah Mills, Arlington and Dulwich Grove.

The light rail extension will aid in increasing public transport use and minimise the dependency on private vehicle utilisation. The designated Marion Street and Lewisham West stops are expected to be within 1km of the subject site. Taverners Hill stop is expected to be within 500m of the site to the south west.

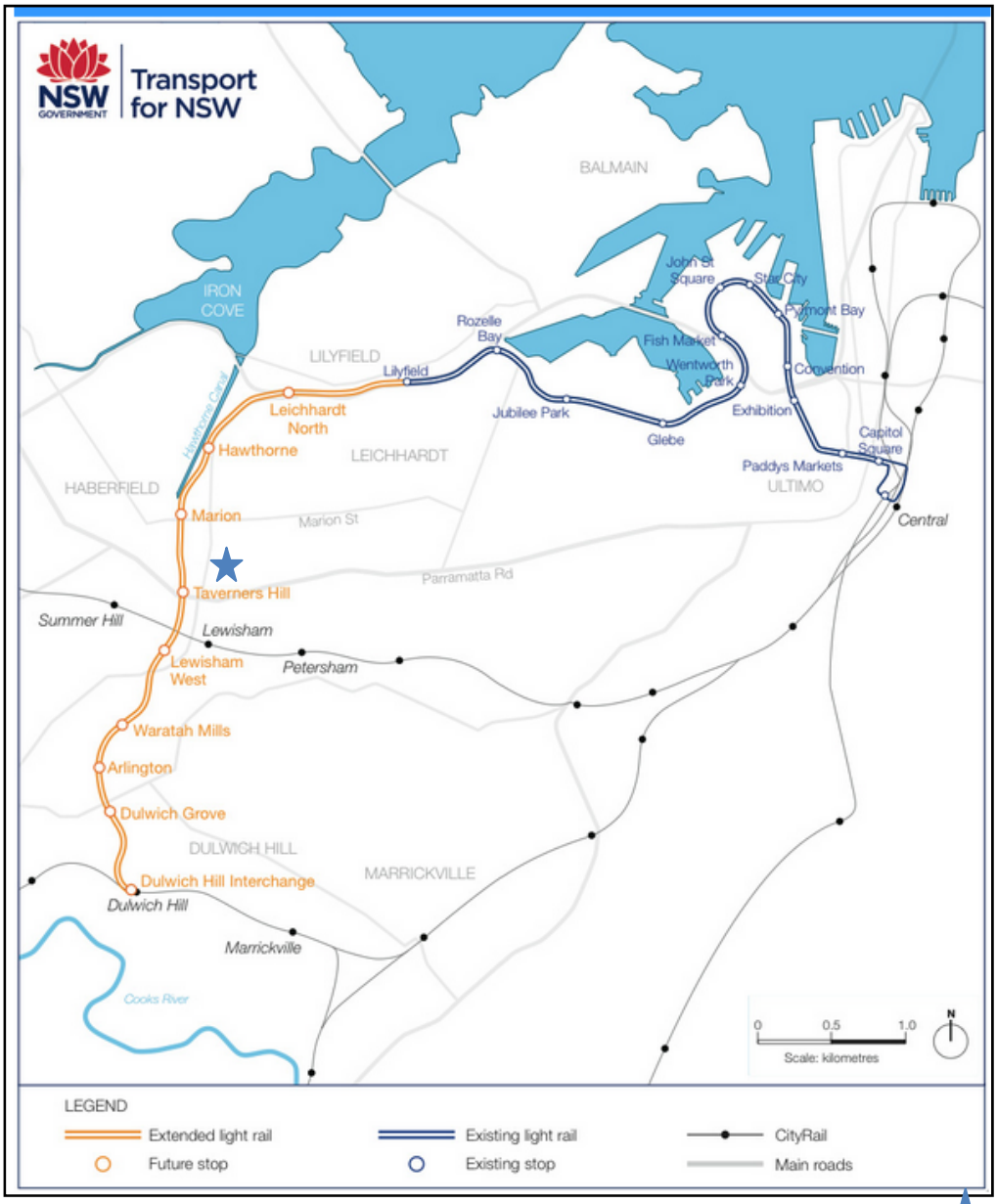


Figure 4: Light Rail Extension **Site Location**

5 PROPOSED DEVELOPMENT

5.1 Description

The proposed development of the site will consist of approximately the following components:

- 334 mixed apartments consisting of:
  - 204 one bedroom units approximately
  - 102 two bedroom units approximately
  - 28 three bedroom units approximately
- Commercial office space of approximately 1,900m^2
- A total of 280-360 parking spaces in ground and basement level car parks

As outlined previously, the assessment will also account for the proposed rezoning of 10-12 George Street, Leichhardt as requested from DoPI however is not part of the Urbis Planning Proposal. The future rezoning will seek an FSR of 2:1 and is likely to yield the following:

- Approximately 2,500m^2 site area
- Development yield of 5,000m^2 (FSR 2:1)
- Assumed 75% residential and 25% commercial office

Assuming all residential units at 10-12 George Street are two bedroom units this will results in 44 units (based on 85m^2 for a two bedroom unit).

5.2 Access Principals

The primary access strategy consideration is to protect the narrow road conditions and associated residential amenity of residential properties at the northern end of Upward Street from the majority of the traffic generation levels associated with the proposed development. Residential amenity in terms of peak hourly traffic levels is more pronounced for narrow streets.

The primary focus of generated traffic is to use George Street which is wider and is ideal to direct traffic levels towards Treadgold Street and then onto Flood Street, towards the north east of the site.

Servicing has been constrained to Upward Street which is contained in the south west sector of the site. The loading bay will be accessed by trucks with restricted length. The proposed land use and scale does not generate high levels of service vehicle activity (unlike existing industrial land use) with the truck lengths restricted to 6.4m Small Rigid Vehicles (SRV) due to the low scale of commercial use plus the occasional 8.8m Medium Rigid Vehicle (MRV) as outlined in **Section 6.6**.

The vehicle access strategy has been designed to contain the servicing vehicles to the south west sector of the site while majority of the traffic generated will travel north on George Street to Flood Street which is a positive design to avoid truck and car conflicts and maintain residential amenity in Upward Street. The internal street is designed with some at-grade parking and is proposed for convenience of visitors (including disabled) to the commercial component and will be designed to facilitate “One Way” B99 design vehicle access with the occasional delivery van and SRV. The exit driveway to Upward Street will be a controlled exit lane eliminating any potential congestion issues and can be made available to emergency vehicles if and when required. Installation of bollards or boom gate will restrict this access.

The pedestrian planning strategy incorporates a link along the northern boundary (to act as a buffer) to allow pedestrian connection through the site. The pedestrian links shown in Figure 11 of the Urban Design Response in the Reid Campbell Built Form and Urban Design Report shows the paths connect to the existing paths on Upward Street and George Street while a secondary pedestrian link is also incorporated through to site to the south west corner, again to benefit the site and precinct generally via a through site linkage, particularly given the future light rail extension outlined previously.

The proposed site layout is a vast improvement on the existing site given the numerous pedestrian and cycle links through the site. These paths will enable easy access to the future light rail as well as the commercial sector at the south of the site. The building footprints have been strategically planned to ensure effective pedestrian and vehicle passage at ground level.

6 PARKING ASSESSMENT

6.1 Council Requirements

Reference is made to Leichhardt Council Development Control Plan 2000 Part A-Amendment No. 8 in effect 16th April 2003 in relation to the proposed residential and commercial development:

TABLE 2: COUNCIL DCP PARKING RATES

Use	Scale	Maximum Rate	Minimum Rate
Residential	1 bed	1 resident space per unit	0.5 resident space per unit
	2 bed	1.6 resident space per unit	0.8 resident space per unit
	3 bed	2 resident space per unit	1 resident space per unit
	Total units	0.2 visitor space per unit	0.1 visitor space per unit
Commercial	Total floor area	3 per 100m^2	1.5 per 100m^2

Application of Councils maximum and minimum parking requirements is summarised in **Table 3** below.

TABLE 3: COUNCIL DCP PARKING REQUIRED

Use	Scale	Maximum Rate	Minimum Rate	Maximum Requirement	Minimum Requirement
Residential	204 x 1 bed	1 per unit	0.5 per unit	204	102
	102 x 2 bed	1.6 per unit	0.8 per unit	163	82
	28x 3 bed	2 per unit	1 per unit	56	28
	334 units	0.2 per unit	0.1 per unit	67	33
Commercial	1,929m^2	3 per 100m^2	1.5 per 100m^2	58	29
Total	-	-	-	548	274

The proposed development requires a minimum of 274 spaces and a maximum of 548 spaces. The proposed development will provide a total of 280-360 spaces of which 218-298 are residential spaces, 33 are residential visitor spaces and 29 are commercial spaces.

6.2 RMS Parking Requirements

The proposed development has also been assessed in relation to the RMS guidelines requirements for high density residential flat buildings and commercial space. The results of the parking required as drawn from the guidelines is shown in **Table 4** below.

TABLE 4: RMS PARKING REQUIREMENT

Use	Scale	Regional Parking Rate	Sub Regional Parking Rate	Parking Required	
				Regional	Sub Regional
Residential	204x 1 bed	0.4 per unit	0.6 per unit	82	122
	102x 2 bed	0.7 per unit	0.9 per unit	71	92
	28 x 3 bed	1.20 per unit	1.40 per unit	34	39
	334 units	1 visitor per 7 units	1 visitor per 5 units	48	67
Commercial	1,929m^2	1 per 40m^2		48	
Total	-	-	-	283	368

When the proposal is assessed under the RMS guidelines parking requirements, it results in a range of 283 to 368 depending on its regional or sub regional location. Given the location of Leichhardt and its availability of public transport infrastructure, a parking provision somewhere between the regional and sub-regional rate is appropriate.

The proposed development will provide a total of 280-360 spaces of which 218-298 are residential spaces, 33 are residential visitor spaces and 29 are commercial spaces.

6.3 Parking Comparison

A parking comparison has been prepared for the required parking amount with respect to the Council's DCP and the RMS guidelines for the residential component.

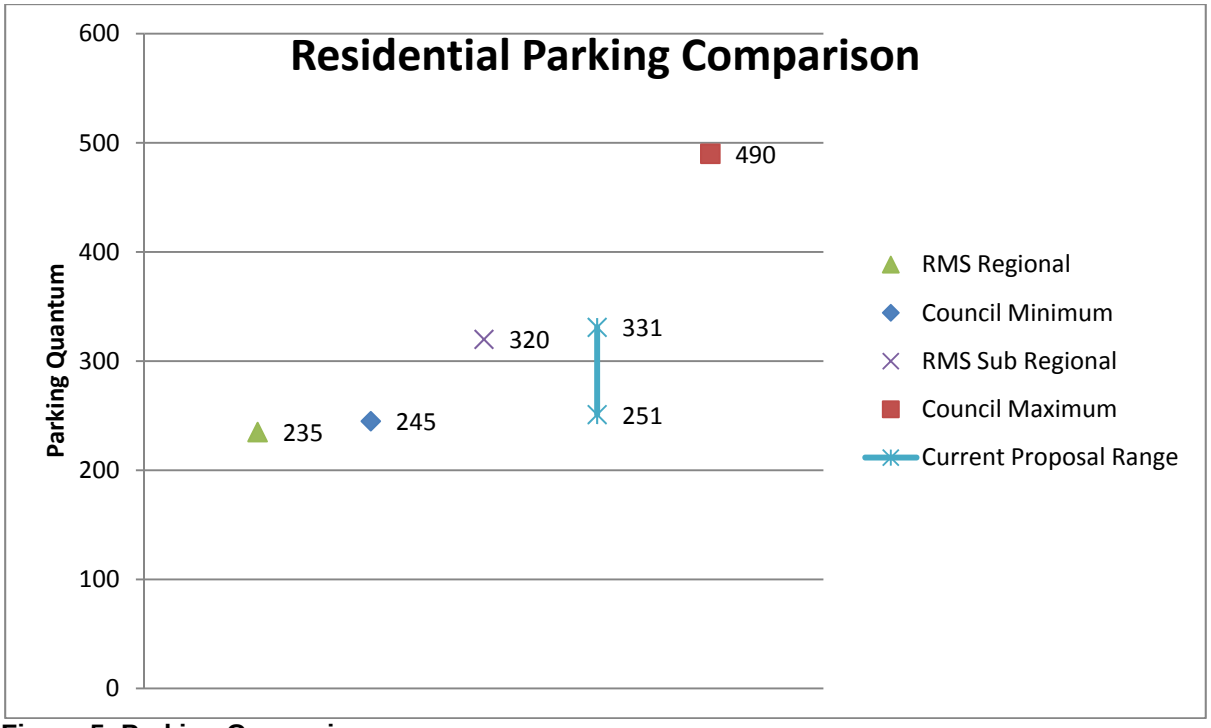


Figure 5: Parking Comparison

As shown in the graph above, the proposed level of residential parking (residents and residential visitors) is an acceptable range complying with Council's minimum requirements and suitably placed with respect to the RMS requirements.

6.4 Accessible Parking

The proposed development will have 33 adaptable units. The parking layout will provide 33 accessible spaces parking spaces for these adaptable units.

For the commercial component, an accessible parking rate of 1% of the total parking is usual practice. The proposal designates 1 accessible space which meets the recommendation.

6.5 Car Share

As the site is closely located to the Sydney CBD, it is reasonable to include Car Share schemes within the quantum of parking. There are numerous car share providers which include GoGet, Flexicar and Charter Drive.

The popularity of car share is rising due to the ease and availability of vehicles as well as the low expense rent and almost nil running costs. The figure below is an example of GoGet car locations with respect to the site

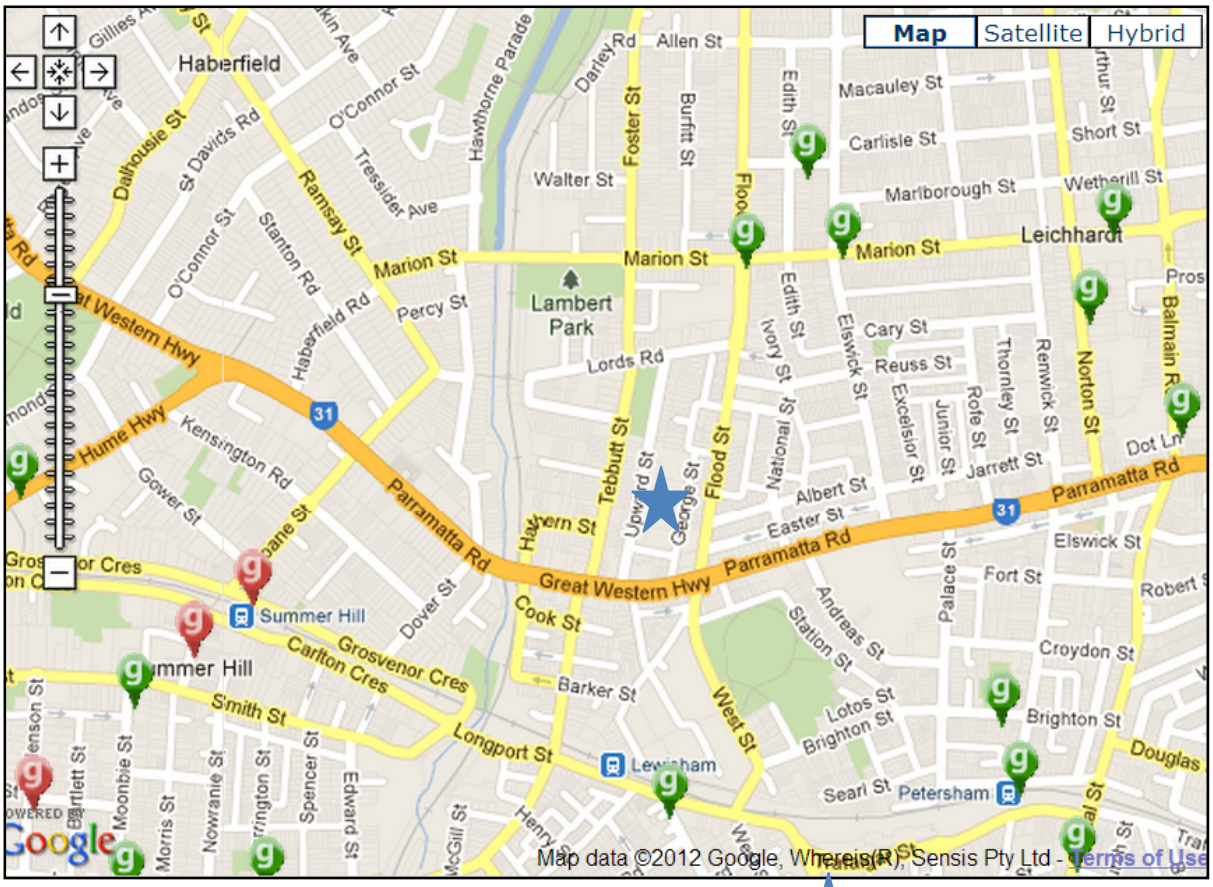


Figure 6: GoGet Map **Site Location**

As shown above, the site has access to existing car share vehicles while there is still justification to provide additional car share vehicles within the sites parking quantum.

Although car share is relatively a new concept, it is a proven success with an increase in locations being provided with car share vehicles. Generally, one car share vehicle can replace up to ten private vehicles that would otherwise compete for local parking space.

6.6 Bicycle Parking

The bicycle parking requirement taken from Councils DCP is outlined below in **Table 5.**

TABLE 5: COUNCIL DCP BICYCLE REQUIREMENT

Use	Scale	Parking Rate	Parking Requirement
Residential	334 units	0.33 resident spaces per unit	110
	334 units	0.08 visitor spaces per unit	26
Commercial	1,929m^2	5 staff spaces per 1000m^2	10
	1,929m^2	1.33 visitor spaces per 1000m^2	3
Total	-	-	149

The proposal details149 bicycle parking spaces and associated storage facilities which complies with Council's DCP requirement.

6.7 Servicing Requirements

The proposal has a loading area access off Upward Street with separated ingress and egress points.

The loading dock will be utilised primarily by a Small Rigid Vehicle (SRV) with the occasional Medium Rigid Vehicle (MRV). In keeping with separating servicing vehicles and residential traffic, the loading vehicle will enter Upward Street off Parramatta Road and exit back onto Parramatta Road. This maintains all servicing vehicles to the south west corner of the site, protecting residential amenity of Upward Street and the nearby school.

Refer to **Annexure E** for swept path analysis.

7 TRAFFIC ASSESSMENT

7.1 Outline

The traffic generated by the development is conducted in accordance with the RMS *Guide to Traffic Generating Developments* (October 2002).

7.2 Traffic Generation

As outlined, the traffic generation rates have been based upon the RMS *Guide to Traffic Generating Developments* (October 2002) with the results of the traffic generation are summarised in **Table 6**.

TABLE 6: TRAFFIC GENERATION

Use	Scale	Generation Rate	Peak Hour Traffic Generation	Traffic AM Split	Traffic PM Split
Proposal					
Residential(1)	334	0.29/dwelling	97	19in;78out	78in;19out
Commercial Office (2)	1,929	1.65(4)/100m^2	32	26in;6out	6in;26out
Total Proposed	**-**	**-**	**129**	**45in;84out**	**84in;45out**
DoPI-10 to 12 George Street					
Residential(1)	44	0.29/dwelling	13	3in;10out	10in;3out
Commercial Office (2)	1,250	1.65(4)/100m^2	21	16in;5out	5in;16out
Total for Assessment	**-**	**-**	**163**	**64in:99out**	**99in:64out**
Existing					
Existing Industrial(3) (Kolotex)	20,000m^2	1/100m^2	200	100in;100out	100in;100out
DA Approved Industrial(3) (Kolotex)	60,000m^2	1/100m^2	600	300in;300out	300in;300out
Industrial(3) (Lablecraft)	4,550m^2	1/100m^2	46	23in;23out	23in;23out
Total Existing	**84,550m^2**	**1/100m^2**	**846**	**423in;423out**	**423in;423out**

Notes:
(1) Residential traffic split of 20%in/80% out during the AM and 80%in/20%out during the PM.
(2) Commercial Office split of 80%in/20%out during AM and 10%in/90%out during the PM
(3) Assumed 50%/50% split during peak periods for industrial
(4) RMS rates are based on 52% car driver where as Leichhardt has 43%, therefore a trip rate of 1.65 has been utilised (43/52 x 2=1.65)

The proposed development will generate a total of 129 peak hour vehicle trips. For the assessment, a total of 163 peak hour vehicle trips will be used as it includes the DoPI intention to rezone 10-12 George Street, Leichhardt.

It should be noted that the approved DA for increased industrial use, in accordance with the RMS guide, would generate a considerably greater level of traffic than what is being considered as part of this proposal.

Additionally, due to the restricted nature of the commercial parking supply, the traffic generation expected would be some 40% lower than that being assessed given the parking requirements as per the RMS guidelines.

Nevertheless, the proposal will be assessed with no consideration given to the existing site traffic generation and restricted commercial parking effects. The assessment is a worse case as no discounts for existing development has been applied.

7.3 Traffic Assignment

The general traffic to/from the site, as determined from Journey to Work (2006) data for the Leichhardt area is presented in **Table 3** previously.

The traffic generation loaded onto the surrounding road network has generally followed the Journey to Work data with the following road linkages predominantly utilised:

- Parramatta Road for South, East and West traffic both inbound and outbound
- George street for inbound and outbound flow
- Upward Street for outbound flow only
- Treadgold Street (south) for inbound and outbound flow

As noted, refer to **Annexure D** for the diagrammatic representation of the traffic generation and assignment.

7.4 Traffic Impact

The traffic generation has been assessed with the results of the SIDRA analysis summarised in **Table 7** below. The use of SIDRA is to compare the existing operation to what is expected as a result of the proposed development and identify significant differences.

TABLE 7: FUTURE INTERSECTION PERFORMANCES

Intersection	Peak Hour	Degree of Saturation[1]	Average Delay[2] (sec/vehicle)	Level of Service[3]	Control Type	Worst Movement
Tebbutt St / Parramatta Rd	7:30-8:30AM	>1	>70	F	Giveway/yield	Left turn from Tebutt
	4:45-5:45PM	0.51	3.8 (24.9)	A (B)	Giveway/yield	Left turn from Tebutt
Upward St / Parramatta Rd	7:30-8:30AM	0.54	0.2 (22.8)	A (B)	Giveway/yield	Left turn from Upward
	4:30-5:30AM	0.19	0.2 (9.1)	A (A)	Giveway/yield	Left turn from Upward
George St / Parramatta Rd	7:30-8:30AM	0.55	0.5 (23.5)	A (B)	Giveway/yield	Left turn from George
	4:30-5:30AM	0.20	0.5 (9.2)	A (A)	Giveway/yield	Left turn from George
Flood St / Parramatta Rd	7:30-8:30AM	0.91	37.9	C	Signals	-
	4:15-5:15PM	1.04	51.5	D	Signals	-
Marion St / Flood St	8:00-9:00AM	0.91	45.4	D	Signals	-
	5:00-6:00PM	1.0	45.9	D	Signals	-
Lords Rd / Flood St	8:45-9:45AM	0.37	8.6 (10.4)	A (A)	Roundabout	Right turn from Lords
	4:45-5:45PM	0.43	8.5 (10.3)	A (A)	Roundabout	Right turn from Lords
Treadgold St (south) / Flood St	8:00-9:00AM	0.17	2.9 (8.8)	A (A)	Giveway/yield	Right turn from Treadgold
	5:00-6:00PM	0.21	3.0 (9.4)	A (A)	Giveway/yield	Right turn from Treadgold
Lords Rd / Tebbutt St	8:30-9:30AM	0.89	33.3	C	Signals	-
	4:15-5:15PM	0.74	20.2	B	Signals	-
Marion St / Tebutt St	7:15-8:15AM	>1	>70	F	Signals	-
	5:00-6:00PM	>1	>70	F	Signals	-
Upward St / Lords Rd	8:15-9:15AM	0.33	1.4 (6.7)	A (A)	Giveway/yield	Right turn from Upward
	4:45-5:45PM	0.18	1.7 (9.1)	A (A)	Giveway/yield	Right turn from Upward

NOTES:
(1) Degree of Saturation is the ratio of demand to capacity for the most disadvantaged movement.
(2) Average delay is the delay experienced on average by all vehicles.
(3) Level of Service is a qualitative measure of performance describing operational conditions. There are six levels of service, designated from A to F, with A representing the best operational condition and level of service F the worst. The LoS of the intersection is shown in bold.

Majority of the intersections analysed maintain their existing performance. Flood Street/Parramatta Road intersection was LoS C & D during the existing AM and PM respectively and under the future condition maintains the LoS C & D during the AM and PM peak respectively. LoS D is still within the RMS acceptable range and indicates that the intersection is close to the limit of stable flow but still allows restricted movement/freedom.

It should be noted that the additional traffic introduced during the PM as part of this assessment represents less than 0.5% of the total traffic volume through the intersection. As previously outlined, the level of traffic which is approved for the existing site is significantly less than what has been assessed as part of this proposal.

7.5 Residential Amenity

The surrounding streets that will have majority of the traffic flow is George Street, Treadgold Street and Flood Street with streets outside of this area having only slight increases in traffic flow due to the proposal development (including the DoPI assessment).
With reference to the RMS guidelines, **Table 8** below shows the residential amenity criteria in terms of traffic flow in residential areas.

TABLE 8: RMS GUIDELINES FOR RESIDENTIAL AMENITY

Road class	Road type	Maximum Speed (km/h)	Maximum peak hour volume (veh/hr)
Local	Access way	25	100
	Street	40	200 environmental goal
			300 maximum
Collector	Street	50	300 environmental
			500 maximum

The existing traffic flows are well below the 200 environmental goal for a local streets of Treadgold Street and George Street. Flood Street, which is a collector road and accommodates traffic flows for Leichhardt Market Place and connection between Marion Street and Parramatta Road would experience greater traffic volumes and cannot be evaluated under the residential amenity given its service to the retail/commercial Leichhardt Market Place as it is expected to carry higher volumes.

It should be noted that the environmental capacity does not indicate the number of vehicles the roadway can accommodate before congestion occurs but is an assessment utilised by the RMS as a guide to when residents are likely voice concerns over vehicle volumes. The amenity of a development is primarily a concern in residential areas where traffic flows greater than the environmental goal can warrant implementation of traffic calming devices.

Considering the traffic generated in this assessment (which is significantly less than what the existing industrial land is approved for), the environmental goal for local streets will not be met or exceeded. Therefore it is considered that the level of traffic generation considered will not adversely affect residential amenity with respect to the RMS guidelines.

8 PARKING & ACCESS

The proposed developments car parking layout complies with AS2890.1:2004, AS2890.2:2002 & AS2890.6:2009 where applicable. Where variations to the standards are included in the design justification has been provided. Our interpretations of the above standards are outlined below:

(a) **Aisle Width**: Minimum 5.8 metres, EXCEPT for public car park aisles, which should be at least 6.2 metres wide.

(b) **Unenclosed Parking Bays:** Minimum 2.4 metre width for tenants and 2.5 metre width for visitors with extra 0.3 metre width for each side wall obstruction. End bay width of 3.4 metres or extend aisle by 1 metre unless other geometric area provided. Parking bay length of 5.4 metres, unless a small bay which can have the dimensions of 5.3 metres long by 2.3 metres wide.

(c) **Enclosed Parking Bays:** A fully enclosed space to achieve minimum single secured garage dimensions of 3 metres width by 6 metres in length. A double secured garage to be at least 5.5 metres wide by 6 metres in length. Fully enclosed disabled parking bays shall be at least 3.8m wide.

(d) **Disabled Parking Bays:** Residential disabled parking spaces can be 3.2 metres wide (which is operationally acceptable) with a clear headroom of 2.5 metres or 2.4 metres wide with an adjacent 2.4m shared zone. Public/visitor disabled spaces must be 2.4m wide with 2.4m adjacent shared zone as per AS2890.6:2009

(e) **Driveway Width and Location**: Minimum width at property boundary of 6 metres and offset by at least 10 metres from a public road intersection.

(f) **Straight Ramp Width**: 5.8m plus 0.3m both sides for kerb, totalling 6.1 metres unless clear visibility is provided coupled with low generated traffic (less than 30 peak hour trips), whereby a narrower width could be considered. This may require introduction of traffic management devices.

(g) **Curved Ramps**: To satisfy swept path requirements for low volume (i.e. < 30 vehicles / hr) car parks and AS2890.1-2004 for high volume car parks.

(h) **Pedestrian Sightlines**: Require to satisfy AS2890.1:2004 with the provision of a 2m by 2.5m sight triangle. If this cannot be achieved, a stop line, signage and warning lights may be considered.

(i) **Headroom**: Minimum of 2.2m EXCEPT for the area directly above disabled parking spaces where a minimum headroom of 2.5m is required.

(j) **Driveway Gradient**: To satisfy sight lines to pedestrians on footpath and comply with under carriage clearance and overhang checks.

(k) **Internal ramp gradients**: A maximum gradient of 1:5 with 2m transition lengths @ 1:8 or 1:10.

(l) **Transitions**: Transitions placed at top and bottom of all ramps where change in gradient exceeds 1:8. Transition lengths of at least 2 metres are generally used.

(m) **Parking module gradients**: Mostly flat or level (5% maximum grade).

(n) **Column setback**: Column set back of 0.75 metres needed for 5.8 metre aisles. No column setback from the aisle is required if aisle width is at least 6.6 metres.

(o) **Pedestrian Paths:** A separate path of at least 1.2 metres in width may be needed at critical locations. Handrails, stairs and/or ramps may also be needed.

8.1 Site Access Arrangements

The site will have ground level parking and a single basement level car park. Ground level will have separate entry and exit driveways on George Street and a single exit driveway on Upward Street on the north west corner of the site which will be a controlled exit.

The basement car park will have a dual entry and exit driveway access from George Street with an automated roller door controlling access to the basement and potential for further secure parking.

The ground floor parking will provide for commercial visitors and drop off bays as shown in Figure 11 of the Urban Design Response in the Reid Campbell Built Form and Urban Design Report. The basement floor will provide some commercial visitor parking during trading hours while also having potential to provide separate/secure parking for residents and tenants.

8.2 Surrounding Vehicular Access Discussion

Refer to **Section 2.2** for the existing road hierarchy and characteristics. Given the proposed primary access arrangements in George Street, majority of all inbound vehicles and outbound vehicles will utilise Treadgold Street (south)/Flood Street intersection and George Street/Parramatta Road intersection.

This subject intersection currently performs at LoS A and will maintain its performance to LoS A however Treadgold Street is narrow (approximately 6m in width) and permits parking in the street which constricts traffic flow which SIDRA

does not account for. Additionally, given the proposed scale of development, increases in pedestrian demand can be expected.

A number of intersection options outlined in the following sub sections have been considered to assist in maintaining the surrounding traffic flow efficiency.

8.2.1 Traffic Signals

As part of this assessment, consideration has been given to the possibility of upgrading Treadgold Street/Flood Street intersection to a signalised intersection. This will aid in safe management of the intersection and access to the proposed site. Accordingly, the intersection has been assessed as outlined below.

Referring to the RMS (RTA) Traffic Signal Practice Design (1992), Section 3 outlines the required warrants for the implementation of traffic signal controls. Firstly, the following conditions are relevant to the warrant:

- Assuming a rate of 2.5 persons per unit this equates to 935 pedestrians ((330+44)x2.5=935). It is considered that approximately 10% of these pedestrians will utilise this intersection, which is 93 people.
- Currently, Flood Street (being the major road) has 370-460 vehicles during any one hour from 7am-10am while during 4pm-7pm the street experiences 450-500 vehicles during any one hour for two way traffic.
- Treadgold carries 20-40 vehicles during the morning and 40-60 vehicles during the afternoon period for two way traffic. During the peak one hour, Treadgold will see 95-96 vehicles in one direction for AM and PM period respectively.

The RMS warrants are as follows:

As a guide, a signalised intersection may be considered if one of the following warrants is met.

a) For each of four one-hour periods of an average day:

i) the major road flow exceeds 600 vehicles/hour in both directions; and

ii) the minor road flow exceeds 200 vehicles/hour in one direction OR

b) For each of four one-hour periods of an average day:

i)the major road flow exceeds 1000 vehicles/hour in both directions; and

ii)the minor road flow exceeds 100 vehicles/hour in one direction: and

iii) the speed of traffic on the major road or limited sight distance from the minor road provides undue delay or hazard to the minor road vehicles; and

iv) there is no other nearby traffic signal site easily accessible to the minor road vehicles OR

c) For each of four one-hour periods of an average day:

i) the pedestrian flow crossing the major road exceeds 150 persons/hour; and

ii) the major road flow exceeds 600 vehicles/hour in both directions or, where there is a central pedestrian refuge, 1000 vehicles/hour in both directions.

d) For each of four one-hour periods of an average day:

i) the pedestrian flow crossing the major road exceeds 150 persons/hour; and

ii) the major road flow exceeds 450 vehicles/hour in both directions or, where there is a central pedestrian refuge, 750 vehicles/hour in both directions; and

iii) the 85th percentile speed on the major road exceeds 75km/h OR

e) i)The intersection has been the site of an average of three or more reported tow-away or casualty traffic accidents per year over a three year period where traffic accidents could have been prevented by traffic signals; and

ii) the traffic flows are at least 0.8 times the appropriate flow warrants

Referring to the above warrants, the intersection of Treadgold Street (south)/Flood Street does not warrant signal control due to the warrants not being met for minor, major and pedestrian flow combinations for either the existing or future condition. Accordingly, this assessed option is not required.

8.2.2 One Way

As traffic will increase to and from Treadgold Street (south) it is plausible to implement a one way pair between Treadgold Street north and south. This will permit entry only at the southern end and exit only at the northern end of Treadgold Street.

The effect of a one way system will force outbound traffic to utilise Parramatta Road or Treadgold North with increases in traffic on George Street (between Treadgold Street north and south). If the system was reversed i.e. entry only at Treadgold Street north and exit at Treadgold Street south, then level of traffic on George Street (between Treadgold Street north and south) will be relatively the same.

For two way access to be maintained in Treadgold Street (south), then it is recommended that the short segment of Treadgold Street (south) from Flood Street to George Street (3 parking spaces) be “No Parking” during peak morning and afternoon periods.

This circulation option is viable and will maintain the existing traffic flow efficiency.

8.2.3 Seagull

Due to the high volume of right turning vehicles and slight increase in delays to through movements, the intersection of Treadgold Street (south)/Flood Street, investigation is required for the possible options/solutions that will maintain the existing traffic flow efficiency. A number of designs which include “seagull” or basic/auxillary/channelised type intersection can be implemented, depending on warrants.

Utilising the above mentioned designs will potentially allow right turn vehicles to stop without impeding on the through movement. Additionally, a seagull will allow easier right turn exit from Treadgold Street (south). Referring to Austroads Guide to Road Design Part 4A: *Unsignalised and Signalised Intersections* outlines the necessary turn and through volumes for different layouts/types of intersections as shown in **Figure 7** below.

Shown in the diagram below, it is recommended that the intersection be upgraded to a Channelised T-Junction. A concept drawing is provided in **Annexure F** for reference.

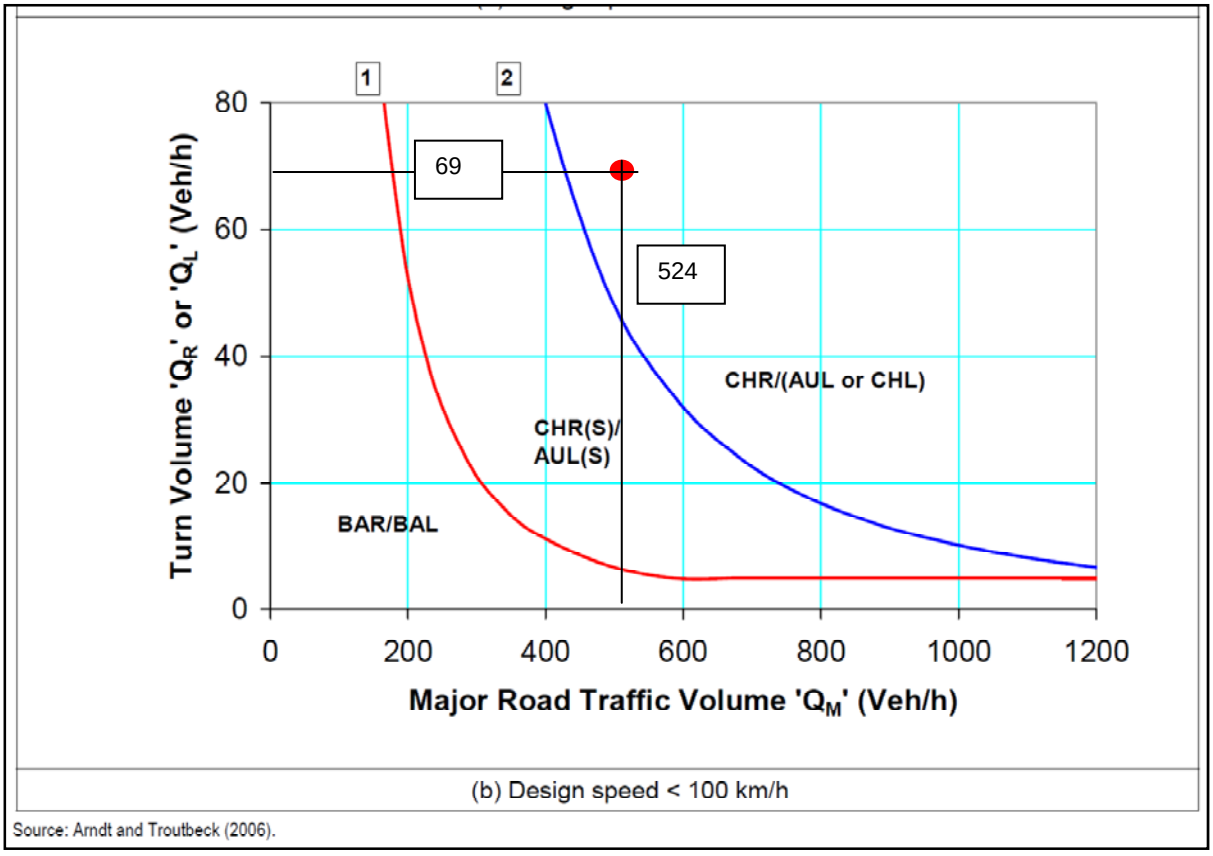
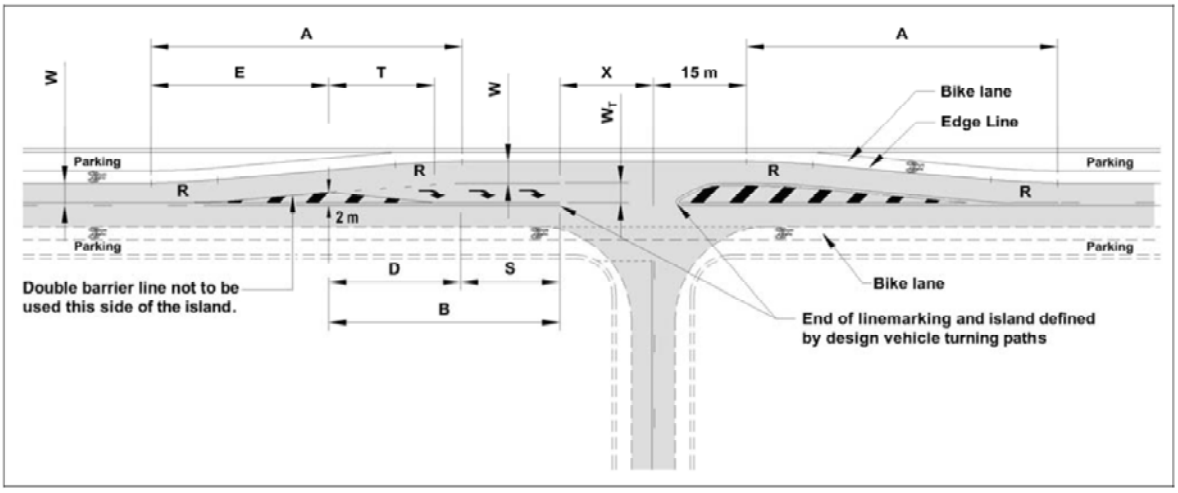


Figure 7: AUSTROADS Intersection Warrant



Notes:

1. This layout includes bicycle lanes. The layout may be used without providing bicycle lanes if insufficient space is available to accommodate them. If midblock bicycle lanes exist in the latter case, alternative treatments must be provided for cyclists to negotiate the intersection (e.g. a separate bicycle path on the nature strip).
2. Islands are to comprise linemarking only (i.e. no raised or depressed medians). Diagonal rows of raised reflective pavement markers within the painted island may be used to improve the delineation of the diagonal pavement markings.
3. The dimensions of the treatment are defined thus:

W = Nominal through lane width (m) (incl. widening for curves). For a new intersection on an existing road, the width is to be in accordance with the current link strategy.

W_T = Nominal width of turn lane (m) (incl. widening for curves based on the design turning vehicle) = 3.0 m minimum.

B = Total length of auxiliary lane including taper, diverge/deceleration and storage (m).

E = Distance from start of taper to 2.0 m width (m) = $(A/W_T) \times 2$.

T = Physical taper length (m) given by:

$$T = \frac{0.33VW_T}{3.6}$$

S = Storage length to cater for one design turning vehicle (m).

V = Design speed of major road approach (km/h).

X = Distance based on design vehicle turning path, typically 10–15 m.

Values of A, D, R and T are shown in Table 7.3.

Source: QDMR 2006.

Figure 8: Detailed Design for Intersection

8.2.4 Roundabout

A roundabout would alleviate any potential problems however due to the geometric constraints of the street and location of properties it is not feasible to introduce this control.

8.2.5 George Street & Parramatta Road

Restricting access onto Parramatta Road from George Street has been considered given the additional delay that would occur on Parramatta Road from the additiona vehicles turning left out as a result of the proposal. The redirected traffic would have to utilise Treadgold Street to gain access to Parramatta Road. The restriction on George Street could be “No Left Turn from 6-9AM”. The results of the SIDRA analysis is shown in **Table 9** for the affected Treadgold Street/Flood Street and Parramatta Road/Flood Street.

8.2.6 Intersection Performance

The options outlined above where assessed using SIDRA INTERSECTION 5.1. The results are shown below (**Table 9**) and reference is made to the existing

performance outlined in **Table 1** and the future performance under existing road layout outlined in **Table 7.**

TABLE 9: INTERSECTION PERFORMANCES OF CONSIDERED OPTIONS

Condition	Peak Hour	Degree of Saturation(1)	Average Delay(2) (sec/vehicle)	Level of Service(3)	Control Type	Worst Movement
Treadgold St/ Flood St EXISTING	AM	0.13	1.3 (8.6)	A (A)	Giveway/yield	Right turn from Treadgold
	PM	0.14	1.4 (9.0)	A (A)	Giveway/yield	Right turn from Treadgold
Treadgold St/ Flood St FUTURE (No Change)	AM	0.17	2.9 (8.8)	A (A)	Giveway/yield	Right turn from Treadgold
	PM	0.21	3.0 (9.4)	A (A)	Giveway/yield	Right turn from Treadgold
Treadgold St/ Flood St TRAFFIC SIGNALS	AM	0.41	9.8	A	Signals	-
	PM	0.49	9.8	A	Signals	-
Treadgold St/ Flood St CHANNELISED RT	AM	0.14	2.3 (8.7)	A (A)	Giveway/yield	Right turn from Treadgold
	PM	0.14	2.3 (9.3)	A (A)	Giveway/yield	Right turn from Treadgold
Treadgold St/ Flood St SEAGULL	AM	0.17	3.1 (8.5)	A (A)	Giveway/yield	Merge Lane
	PM	0.21	3.2 (8.6)	A (A)	Giveway/yield	Merge Lane
Treadgold St/ Flood St ROUNDABOUT	AM	0.21	6.8 (10.5)	A (A)	Roundabout	Right turn from Treadgold
	PM	0.24	6.9 (10.6)	A (A)	Roundabout	Right turn from Treadgold
Treadgold St/ Flood St FUTURE (redirected	AM	0.17	3.1 (9.0)	A (A)	Giveway/yield	Right turn from Treadgold
	PM	0.21	3.1 (9.5)	A (A)	Giveway/yield	Right turn from Treadgold

traffic)						
Parramatta Rd/ Flood FUTURE (redirected traffic)	AM	0.91	40.7	C	Signals	
	PM	1.04	54	D	Signals	

NOTES:
(1) Degree of Saturation is the ratio of demand to capacity for the most disadvantaged movement.
(2) Average delay is the delay experienced on average by all vehicles.
(3) Level of Service is a qualitative measure of performance describing operational conditions. There are six levels of service, designated from A to F, with A representing the best operational condition and level of service F the worst. The LoS of the intersection is shown in bold.

As outlined above, the realistic intersection options, being channelised or seagull, achieve delays similar to what will be experienced under the existing condition. As outlined, refer to **Annexure F** for concept plans of the channelised intersection and seagull intersection which has been designed in accordance with the AUSTROADS publication.

The option of restricted access from George Street onto Parramatta Road has had little impact on the affected intersections with their respective LoS being retained. This is a viable solution to avoid queuing on Parramatta Road due to exiting vehicles and direct vehicles to utilise Parramatta Road/Flood Street intersection.

8.3 Option Selection

Overall, the preferred treatment for Treadgold Street (south)/Flood Street intersection is to implement a channelised/seagull type intersection due to the warrant for turning vehicles being met. A one way pair between Treadgold Street (north & south) can also be introduced subject to Local Traffic Committee approval.

As outlined, continuing of the two way flow in Treadgold Street (south) would require parking to be removed (3 spaces).Upgrade to the intersection will also require loss of parking in Flood Street (expected to be approximately 18 spaces) which results in a total of 21 removed spaces. It should be outlined that due to the Kolotex & Labelcraft development, redundant kerb crossings will add to the parking capacity of the precinct (approximately 12 parking spaces will be added; these spaces should be restricted parking to avoid future light rail commuters from parking subject to Local Traffic Committee approval). Overall, removal of parking in Treadgold Street and Flood Street will be slightly offset by the introduction of parking in George Street such that a net effect of 9 parking spaces will be removed from the precinct.

Currently, occupied parking in the precinct is under utilised with only 78-79% occupied during peak periods (Refer to **Section 2.5**). Therefore, the loss of up to 9 car spaces will not be detrimental given the current capacity utilisation and the existing/future public transport infrastructure.

Turn restrictions for exiting vehicles at George Street will not adversely affect the other surrounding intersections as highlighted in Table 9. This restriction can be monitored and is not immediately required.

The surrounding streets can be perceived as being “narrow” in nature. Existing driveways provide the necessary passing opportunities required with the proposed development maintaining the current situation and passing opportunities.

9 CONSTRUCTION TRAFFIC MANAGEMENT

A construction traffic management plan will be prepared for the proposed development identifying:

- Construction period, including stages of construction.
- The daily volume of construction traffic generated (trucks, plant & equipment vehicles, materials delivery and construction staff vehicles) for demolition and construction phases.
- Site Access for trucks & construction staff. Control of soil / mud from being dropped from the wheels of construction vehicles onto adjacent public streets when those vehicles leave the construction site.
- Construction staff parking zones.

The site has restricted access opportunities from all frontages and it is likely that significant work zones will need to be implemented to protect the general public.

10 CONCLUSIONS

The proposed redevelopment of the existing Kolotex & Labelcraft site at 22 & 30-40 George Street, Leichhardt will results in the following development characteristics:

- 334 mixed apartments approximately
- Commercial office space of approximately 1,900m^2 approximately
- Ground level parking and one (1) level of basement carpark
- A total of 280 to 360 car parking spaces

In addition to the above, the assessment included development of 10-12 George Street, Leichhardt as outlined in Section 1.

In the view of the foregoing, it is evident that development will give rise to substantially improved traffic and parking conditions compared to the existing site operation and DA approved industrial consent options for the site.

The proposed development has sufficient car parking supply to cater for the proposed scale of development. Additionally, the quantum of bicycle parking will aid in promoting a greater mode share.

The location of the loading dock access off Upward Street is acceptable as it is separate from the traffic generating driveways in George Street, therefore reducing conflict and congestion. The main ingress/egress points in George Street for residents and visitors are acceptable in terms of traffic flow, road safety and residential amenity.

The assessed traffic generation has been accommodated by the surrounding intersections with no significant adjustments to LoS performances. The proposed site ingress and egress arrangements aid in protecting residential amenity.

The recommended seagull/channelised intersection option and possible one way pair of Treadgold Street are viable options and provide improved road safety for all road users. The loss of on street parking due to the intersection upgrade is offset by parking gains provided by redundant vehicle crossovers around the site boundary. Additionally, the precinct is under parking capacity and the loss of parking will not have adverse affects.

The site provides good internal pedestrian access and will accommodate the level of pedestrian activity through the site with due consideration given to the future light rail extension. The location of the site and density of development proposed is appropriate given the availability and choice of public transport services located close to the site, which will naturally lower the number of private vehicle movements generated by the development

Accordingly, the proposed development scale is supportable in terms of its traffic and parking impacts provided the recommendations outlined in this report are adopted.

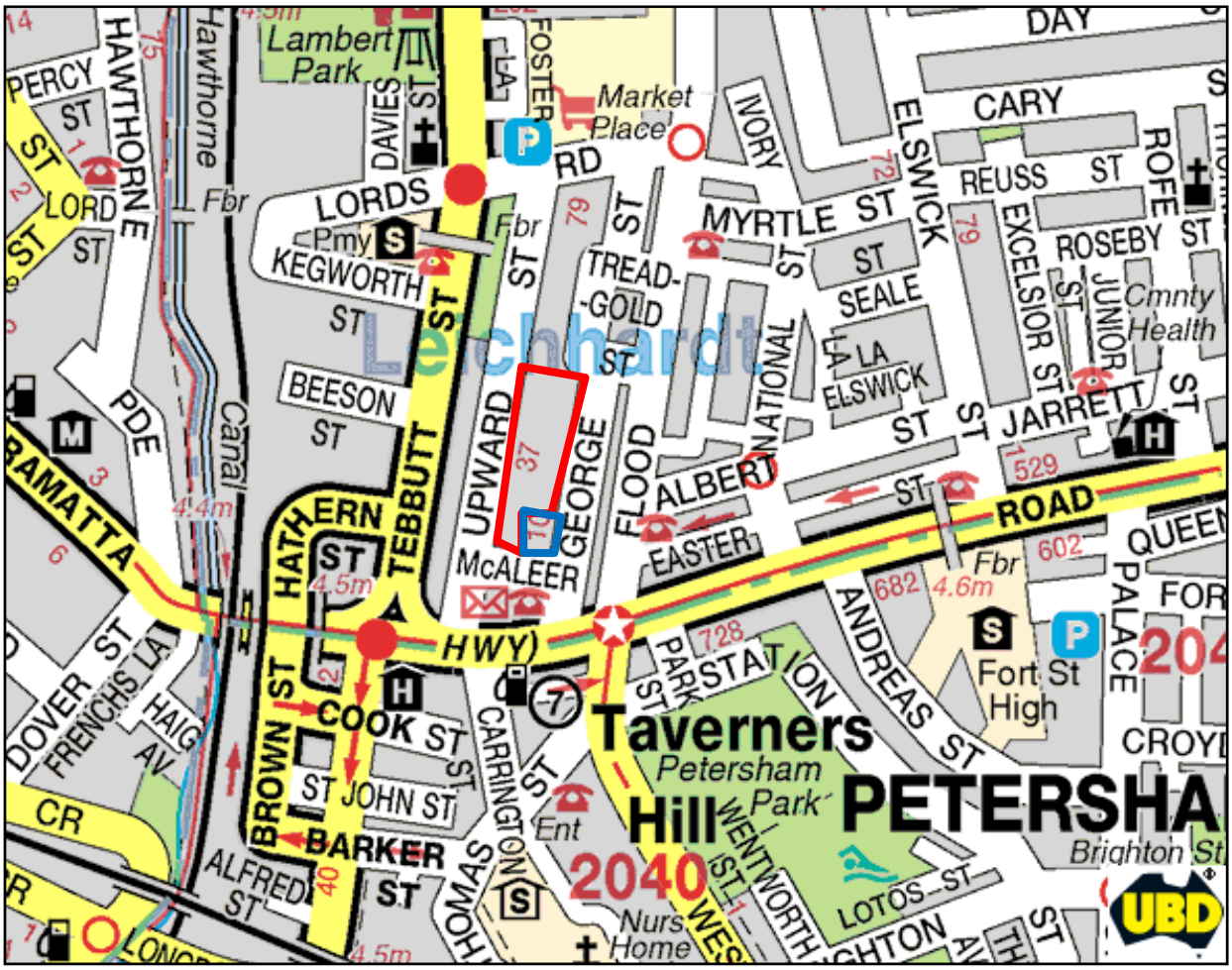
Site Location
DoPI Assessed Site

KOLOTEX & LABELCRAFT REDEVELOPMENT

FIGURE 9:
AERIAL SITE LOCATION

PREPARED FOR: CATYLIS PROPERTIES

BY: M^CLAREN TRAFFIC ENGINEERING



Site Location
DoPI Assessed Site

KOLOTEX & LABELCRAFT REDEVELOPMENT

FIGURE 10:
UBD SITE LOCATION

PREPARED FOR: CATYLIS PROPERTIES

BY: M^CLAREN TRAFFIC ENGINEERING

ANNEXURE A: PROPOSED PLANS

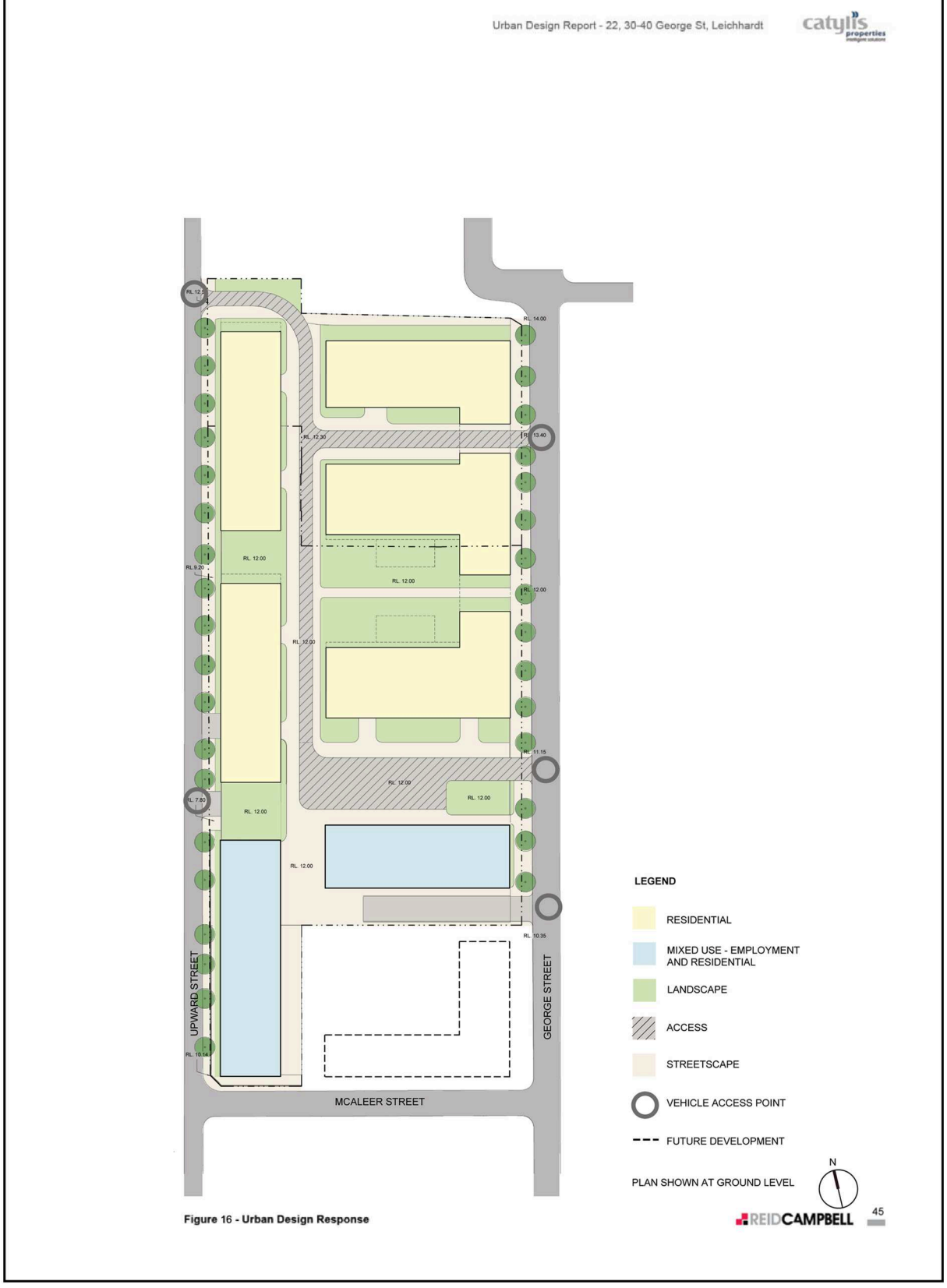


Figure 16 - Urban Design Response

ANNEXURE B: TRAFFIC SURVEY (Sheet 1 of 20)

Curtis Traffic Surveys	Turning movement count				Peak Hour Volumes			
Job:	120904mcl(072)					13	8 254	N
Day, date	13/09/12					18		
Location:	Threadgold St South & Flood St						5 240	
Weather:	Fine							
Client:	McLaren Traffic Engineering							
	From Flood St north		From Threadgold St Sth		From Flood St south			
Time Period	through	right	left	right	left	through	Total	
16:15 to 16:30	62	2	3	4	3	61	135	
16:30 to 16:45	44	3	4	6	5	59	121	
16:45 to 17:00	51	4	2	4	3	57	121	
17:00 to 17:15	65	2	3	6	2	56	134	
17:15 to 17:30	71	1	3	4	1	71	151	peak
17:30 to 17:45	56	3	4	5	2	56	126	
17:45 to 18:00	62	2	3	3	0	57	127	
18:00 to 18:15	67	3	3	7	1	53	134	
18:15 to 18:30	59	2	4	6	2	58	131	
18:30 to 18:45	47	0	5	8	0	38	98	
18:45 to 19:00	62	1	4	4	1	55	127	
19:00 to 19:15	51	0	3	5	0	40	99	
Total	697	23	41	62	20	661		
Hourly summary								
16:15 to 17:15	222	11	12	20	13	233	511	
16:30 to 17:30	231	10	12	20	11	243	527	
16:45 to 17:45	243	10	12	19	8	240	532	
17:00 to 18:00	254	8	13	18	5	240	538	peak hour
17:15 to 18:15	256	9	13	19	4	237	538	peak hour
17:30 to 18:30	244	10	14	21	5	224	518	
17:45 to 18:45	235	7	15	24	3	206	490	
18:00 to 19:00	235	6	16	25	4	204	490	
18:15 to 19:15	219	3	16	23	3	191	455	

ANNEXURE B: TRAFFIC SURVEY (Sheet 2 of 20)

Curtis Traffic Surveys

Turning movement count

Job: 120904mcl(072)

Day, date: 13/09/12

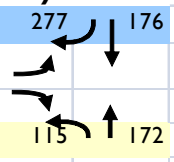
Location: Flood St & Lords Rd

Weather: Fine

Client: McLaren Traffic Engineering

N

Peak Hour Volumes



Time Period	From Flood St north		From Lords Rd		From Flood St south		Total	
	through	right	left	right	left	through		
16:00 to 16:15	41	71	45	31	22	41	251	
16:15 to 16:30	34	75	42	33	24	36	244	
16:30 to 16:45	36	74	45	20	12	34	221	
16:45 to 17:00	40	52	58	36	35	48	269	
17:00 to 17:15	41	68	39	31	30	37	246	
17:15 to 17:30	54	71	41	28	27	41	262	
17:30 to 17:45	41	86	45	35	23	46	276	peak
17:45 to 18:00	44	60	38	26	15	44	227	
18:00 to 18:15	35	43	35	31	17	45	206	
18:15 to 18:30	32	39	25	24	9	46	175	
18:30 to 18:45	39	49	29	27	8	47	199	
18:45 to 19:00	38	43	28	17	7	32	165	
Total	475	731	470	339	229	497		
Hourly summary								
16:00 to 17:00	151	272	190	120	93	159	985	
16:15 to 17:15	151	269	184	120	101	155	980	
16:30 to 17:30	171	265	183	115	104	160	998	
16:45 to 17:45	176	277	183	130	115	172	1053	peak hour
17:00 to 18:00	180	285	163	120	95	168	1011	
17:15 to 18:15	174	260	159	120	82	176	971	
17:30 to 18:30	152	228	143	116	64	181	884	
17:45 to 18:45	150	191	127	108	49	182	807	
18:00 to 19:00	144	174	117	99	41	170	745	

ANNEXURE B: TRAFFIC SURVEY (Sheet 3 of 20)

Curtis Traffic Surveys	Turning movement count								
Job:	120904mcl(072)								
Day, date	13/09/12								
Location:	Parramatta Rd & Tebbutt St								
Weather:	Fine								
Client:	McLaren Traffic Engineering								

N

Peak Hour Volumes: 110, 1771

0 138

0

2486

	From Parramatta Rd east		From Tebbutt St		From Parramatta Rd west			
Time Period	through	right	left	right	left	through	Total	
16:00 to 16:15	477	0	43	0	24	351	895	
16:15 to 16:30	577	0	32	0	28	437	1074	
16:30 to 16:45	632	0	41	0	32	479	1184	peak
16:45 to 17:00	651	0	33	0	24	461	1169	
17:00 to 17:15	591	0	35	0	29	407	1062	
17:15 to 17:30	612	0	29	0	25	424	1090	
17:30 to 17:45	492	0	36	0	26	345	899	
17:45 to 18:00	594	0	30	0	21	451	1096	
18:00 to 18:15	486	0	23	0	16	312	837	
18:15 to 18:30	403	0	18	0	21	300	742	
18:30 to 18:45	474	0	16	0	14	312	816	
18:45 to 19:00	435	0	20	0	17	318	790	
Total	6424	0	356	0	277	4597		
Hourly summary								
16:00 to 17:00	2337	0	149	0	108	1728	4322	
16:15 to 17:15	2451	0	141	0	113	1784	4489	
16:30 to 17:30	2486	0	138	0	110	1771	4505	peak hour
16:45 to 17:45	2346	0	133	0	104	1637	4220	
17:00 to 18:00	2289	0	130	0	101	1627	4147	
17:15 to 18:15	2184	0	118	0	88	1532	3922	
17:30 to 18:30	1975	0	107	0	84	1408	3574	
17:45 to 18:45	1957	0	87	0	72	1375	3491	
18:00 to 19:00	1798	0	77	0	68	1242	3185	

ANNEXURE B: TRAFFIC SURVEY (Sheet 4 of 20)

Curtis Traffic Surveys	Turning movement count				Peak Hour Volumes		0	5	
Job:	120904mcl(072)		N			4			0
Day, date	13/09/12					1905			2486
Location:	Parramatta Rd & Upward St								
Weather:	Fine								
Client:	McLaren Traffic Engineering								

	From Parramatta Rd east		From Upward St		From Parramatta Rd west			
Time Period	through	right	left	right	left	through	Total	
16:00 to 16:15	477	0	1	0	3	391	872	
16:15 to 16:30	577	0	4	0	1	468	1050	
16:30 to 16:45	632	0	3	0	1	519	1155	peak
16:45 to 17:00	651	0	2	0	1	493	1147	
17:00 to 17:15	591	0	0	0	1	441	1033	
17:15 to 17:30	612	0	0	0	1	452	1065	
17:30 to 17:45	492	0	0	0	1	380	873	
17:45 to 18:00	594	0	1	0	0	481	1076	
18:00 to 18:15	486	0	2	0	1	334	823	
18:15 to 18:30	403	0	0	0	1	317	721	
18:30 to 18:45	474	0	0	0	0	328	802	
18:45 to 19:00	435	0	0	0	0	338	773	
Total	6424	0	13	0	11	4942		
Hourly summary								
16:00 to 17:00	2337	0	10	0	6	1871	4224	
16:15 to 17:15	2451	0	9	0	4	1921	4385	
16:30 to 17:30	2486	0	5	0	4	1905	4400	peak hour
16:45 to 17:45	2346	0	2	0	4	1766	4118	
17:00 to 18:00	2289	0	1	0	3	1754	4047	
17:15 to 18:15	2184	0	3	0	3	1647	3837	
17:30 to 18:30	1975	0	3	0	3	1512	3493	
17:45 to 18:45	1957	0	3	0	2	1460	3422	
18:00 to 19:00	1798	0	2	0	2	1317	3119	

ANNEXURE B: TRAFFIC SURVEY (Sheet 5 of 20)

Curtis Traffic Surveys	Turning movement count								
Job:	120904mcl(072)				Peak Hour Volumes		70	78	
Day, date	13/09/12					401			537
Location:	Marion St & Foster St					133			14
Weather:	Fine								
Client:	McLaren Traffic Engineering								
		From Parramatta Rd east		From Upward St		From Parramatta Rd west			
Time Period		through	right	left	right	left	through	Total	
16:15 to 16:30		4	93	21	15	91	32	256	
16:30 to 16:45		7	149	19	19	93	29	316	
16:45 to 17:00		2	124	19	16	71	45	277	
17:00 to 17:15		2	165	27	19	99	49	361	peak
17:15 to 17:30		6	129	13	21	109	15	293	
17:30 to 17:45		4	119	19	14	122	24	302	
17:45 to 18:00		4	137	27	20	117	39	344	
18:00 to 18:15		5	131	14	17	110	33	310	
18:15 to 18:30		1	123	23	15	99	20	281	
18:30 to 18:45		1	105	19	12	89	22	248	
18:45 to 19:00		2	112	15	15	79	18	241	
19:00 to 19:15		0	0	0	0	0	0	0	
Total		38	1387	216	183	1079	326		
Hourly summary									
16:15 to 17:15		15	531	86	69	354	155	1210	
16:30 to 17:30		17	567	78	75	372	138	1247	
16:45 to 17:45		14	537	78	70	401	133	1233	
17:00 to 18:00		16	550	86	74	447	127	1300	peak hour
17:15 to 18:15		19	516	73	72	458	111	1249	
17:30 to 18:30		14	510	83	66	448	116	1237	
17:45 to 18:45		11	496	83	64	415	114	1183	
18:00 to 19:00		9	471	71	59	377	93	1080	
18:15 to 19:15		4	340	57	42	267	60	770	

ANNEXURE B: TRAFFIC SURVEY (Sheet 6 of 20)

Curtis Traffic Surveys	Turning movement count											
Job:	120904mcl(072)					Peak Hour Volumes	4		0	2		
Day, date	13/09/12						1905				0	2486
Location:	Parramatta Rd & George St											
Weather:	Fine											
Client:	McLaren Traffic Engineering											
	From Parramatta Rd east		From George St		From Parramatta Rd west							
Time Period	through	right	left	right	left	through	Total					
16:00 to 16:15	477	0	0	0	0	394	871					
16:15 to 16:30	577	0	0	0	1	468	1046					
16:30 to 16:45	632	0	0	0	3	517	1152	peak				
16:45 to 17:00	651	0	1	0	1	493	1146					
17:00 to 17:15	591	0	1	0	0	442	1034					
17:15 to 17:30	612	0	0	0	0	453	1065					
17:30 to 17:45	492	0	1	0	1	380	874					
17:45 to 18:00	594	0	0	0	0	481	1075					
18:00 to 18:15	486	0	0	0	0	335	821					
18:15 to 18:30	403	0	1	0	1	317	722					
18:30 to 18:45	474	0	0	0	0	328	802					
18:45 to 19:00	435	0	1	0	1	337	774					
Total	6424	0	5	0	8	4945						
Hourly summary												
16:00 to 17:00	2337	0	1	0	5	1872	4215					
16:15 to 17:15	2451	0	2	0	5	1920	4378					
16:30 to 17:30	2486	0	2	0	4	1905	4397	peak hour				
16:45 to 17:45	2346	0	3	0	2	1768	4119					
17:00 to 18:00	2289	0	2	0	1	1756	4048					
17:15 to 18:15	2184	0	1	0	1	1649	3835					
17:30 to 18:30	1975	0	2	0	2	1513	3492					
17:45 to 18:45	1957	0	1	0	1	1461	3420					
18:00 to 19:00	1798	0	2	0	2	1317	3119					

ANNEXURE B: TRAFFIC SURVEY (Sheet 7 of 20)

Curtis Traffic Surveys

Turning movement count

Job: 120904mcl(072)

Day, date: Thu 13 Sep 12

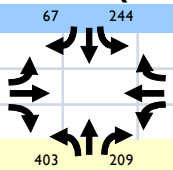
Location: West St, Flood St & Parramatta Rd

Weather: Fine

Client: McLaren Traffic Engineering

All motor vehicles

Peak Hour: 67 244 30 / 57 / 0 / 1872 / 2285 / 559 / 37 / 403 / 209 / 3



Time Period	From Flood St			From Parramatta Rd west			From West St			From Parramatta Rd east			Total vehicle movements	
	left	through	right	left	through	right	left	through	right	left	through	right		
16:00 to 16:15	3	24	13	4	391	82	60	62	0	3	455	0	1097	
16:15 to 16:30	4	33	11	9	463	105	97	52	1	4	529	1	1309	
16:30 to 16:45	10	61	19	10	505	117	99	50	2	11	588	0	1472	
16:45 to 17:00	6	69	10	14	487	151	77	53	0	3	406	0	1276	
17:00 to 17:15	9	61	18	20	432	140	118	59	1	16	648	0	1522	
17:15 to 17:30	5	53	20	13	448	151	109	47	0	7	643	0	1496	
17:30 to 17:45	1	61	19	12	379	102	101	35	0	3	433	1	1147	
17:45 to 18:00	6	43	18	14	473	107	109	55	2	11	687	0	1525	Peak
18:00 to 18:15	6	47	12	12	329	145	117	45	0	7	639	0	1359	
18:15 to 18:30	3	39	8	4	312	88	71	67	2	8	745	0	1347	
18:30 to 18:45	2	42	19	5	326	143	87	48	0	5	484	0	1161	
18:45 to 19:00	5	36	11	7	332	97	77	39	0	6	487	0	1097	
Totals	60	569	178	124	4877	1428	1122	612	8	84	6744	2		
16:00 to 17:00	23	187	53	37	1846	455	333	217	3	21	1978	1	5154	
16:15 to 17:15	29	224	58	53	1887	513	391	214	4	34	2171	1	5579	
16:30 to 17:30	30	244	67	57	1872	559	403	209	3	37	2285	0	5766	Peak Hour
16:45 to 17:45	21	244	67	59	1746	544	405	194	1	29	2130	1	5441	
17:00 to 18:00	21	218	75	59	1732	500	437	196	3	37	2411	1	5690	
17:15 to 18:15	18	204	69	51	1629	505	436	182	2	28	2402	1	5527	
17:30 to 18:30	16	190	57	42	1493	442	398	202	4	29	2504	1	5378	
17:45 to 18:45	17	171	57	35	1440	483	384	215	4	31	2555	0	5392	
18:00 to 19:00	16	164	50	28	1299	473	352	199	2	26	2355	0	4964	

ANNEXURE B: TRAFFIC SURVEY (Sheet 8 of 20)

Curtis Traffic Surveys

Turning movement count

Job: 120904mcl(072)

Day, date: Thu 13 Sep 12

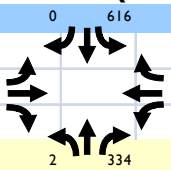
Location: Lords Rd, Foster St & Tebbutt St

Weather: Fine

Client: McLaren Traffic Engineering

All motor vehicles

Peak Hour: 0 616 156 | 22 182 | 20 54 | 9 115 | 2 334 90



Time Period	From Foster St			From Lords Rd west			From Tebbutt St			From Lords Rd east			Total vehicle movements	
	left	through	right	left	through	right	left	through	right	left	through	right		
16:00 to 16:15	42	131	3	6	7	5	6	75	25	14	11	48	373	
16:15 to 16:30	48	158	0	3	5	2	0	95	27	17	16	54	425	Peak
16:30 to 16:45	36	140	0	6	5	3	1	89	20	30	15	42	387	
16:45 to 17:00	36	145	0	5	5	2	1	83	22	31	13	43	386	
17:00 to 17:15	36	173	0	8	5	2	0	67	21	37	10	43	402	
17:15 to 17:30	35	126	0	0	2	3	1	74	25	48	31	39	384	
17:30 to 17:45	34	142	0	1	3	2	1	65	31	26	11	35	351	
17:45 to 18:00	37	151	0	2	4	2	0	72	35	19	6	43	371	
18:00 to 18:15	31	129	0	4	5	0	0	84	19	27	13	40	352	
18:15 to 18:30	32	134	0	4	3	0	0	63	20	25	11	39	331	
18:30 to 18:45	20	109	0	3	1	4	1	75	16	12	3	25	269	
18:45 to 19:00	24	104	0	3	1	3	0	75	15	14	3	26	268	
Totals	411	1642	3	45	46	28	11	917	276	300	143	477		
16:00 to 17:00	162	574	3	20	22	12	8	342	94	92	55	187	1571	
16:15 to 17:15	156	616	0	22	20	9	2	334	90	115	54	182	1600	Peak Hour
16:30 to 17:30	143	584	0	19	17	10	3	313	88	146	69	167	1559	
16:45 to 17:45	141	586	0	14	15	9	3	289	99	142	65	160	1523	
17:00 to 18:00	142	592	0	11	14	9	2	278	112	130	58	160	1508	
17:15 to 18:15	137	548	0	7	14	7	2	295	110	120	61	157	1458	
17:30 to 18:30	134	556	0	11	15	4	1	284	105	97	41	157	1405	
17:45 to 18:45	120	523	0	13	13	6	1	294	90	83	33	147	1323	
18:00 to 19:00	107	476	0	14	10	7	1	297	70	78	30	130	1220	

ANNEXURE B: TRAFFIC SURVEY (Sheet 9 of 20)

Curtis Traffic Surveys

Turning movement count

Job: 120904mcl(072)

Day, date: Thu 13 Sep 12

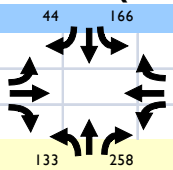
Location: Marion St & Flood St

Weather: Fine

Client: McLaren Traffic Engineering

All motor vehicles

Peak Hour: 44 166 13 / 24 / 14 / 379 / 562 / 74 / 213 / 133 258 212

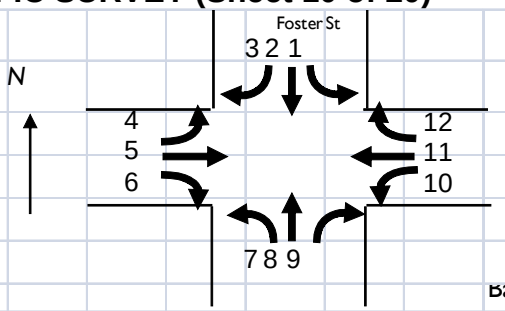


Time Period	From Flood St north			From Marion St west			From Flood St south			From Marion St east			Total vehicle movements	
	left	through	right	left	through	right	left	through	right	left	through	right		
16:00 to 16:15	6	47	15	10	82	24	41	55	49	56	119	4	508	
16:15 to 16:30	0	42	5	5	91	23	30	42	61	51	120	5	475	
16:30 to 16:45	2	38	6	4	84	16	35	56	50	53	131	6	481	
16:45 to 17:00	3	25	10	8	87	10	44	61	61	41	142	4	496	
17:00 to 17:15	6	56	8	1	95	14	39	70	60	45	104	4	502	
17:15 to 17:30	2	42	16	9	92	22	19	69	46	66	148	2	533	
17:30 to 17:45	2	43	10	6	105	28	31	58	45	61	168	4	561	Peak
17:45 to 18:00	2	42	5	6	102	16	30	50	51	43	124	6	477	
18:00 to 18:15	5	36	9	7	95	20	26	89	52	21	130	8	498	
18:15 to 18:30	3	37	11	8	81	21	23	82	47	15	115	7	450	
18:30 to 18:45	1	26	7	10	77	11	21	43	37	13	84	9	339	
18:45 to 19:00	2	14	2	5	73	9	11	37	22	20	87	2	284	
Totals	34	448	104	79	1064	214	350	712	581	485	1472	61		
16:00 to 17:00	11	152	36	27	344	73	150	214	221	201	512	19	1960	
16:15 to 17:15	11	161	29	18	357	63	148	229	232	190	497	19	1954	
16:30 to 17:30	13	161	40	22	358	62	137	256	217	205	525	16	2012	
16:45 to 17:45	13	166	44	24	379	74	133	258	212	213	562	14	2092	Peak Hour
17:00 to 18:00	12	183	39	22	394	80	119	247	202	215	544	16	2073	
17:15 to 18:15	11	163	40	28	394	86	106	266	194	191	570	20	2069	
17:30 to 18:30	12	158	35	27	383	85	110	279	195	140	537	25	1986	
17:45 to 18:45	11	141	32	31	355	68	100	264	187	92	453	30	1764	
18:00 to 19:00	11	113	29	30	326	61	81	251	158	69	416	26	1571	

ANNEXURE B: TRAFFIC SURVEY (Sheet 10 of 20)

Curtis Traffic Surveys

Job:	120904mcl(072)
Day, date	Thu 13 Sep 12
Location:	Marion St & Foster St
Weather:	Fine
Surveyor	

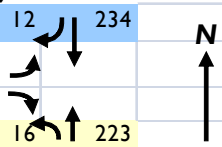


All motor vehicles — Banned movemen

Time Start 16:00	1	2	3	4	5	6	7	8	9	10	11	12
16:15	4	110	12	5	104	13	25	89	12	21	145	0
16:30	4	93	21	15	91	32	28	95	7	28	140	0
16:45	7	149	19	19	93	29	38	87	15	45	144	0
17:00	2	124	19	16	71	45	47	75	11	23	132	0
17:15	2	165	27	19	99	49	36	68	22	22	123	0
17:30	6	129	13	21	109	15	41	75	10	27	143	0
17:45	4	119	19	14	122	24	32	76	10	30	174	0
18:00	4	137	27	20	117	39	41	75	19	34	169	0
18:15	5	131	14	17	110	33	31	68	25	28	154	0
18:30	1	123	23	15	99	20	25	74	12	16	121	0
18:45	1	105	19	12	89	22	30	78	15	18	98	0
19:00	2	112	15	15	79	18	35	69	10	16	95	0

ANNEXURE B: TRAFFIC SURVEY (Sheet 11 of 20)

Curtis Traffic Surveys	Turning movement count							
Job:	120904mcl(072)				Peak Hour Volumes			
Day, date	13/09/12					7		
Location:	Flood St & Threadgold St Sth					6		
Weather:	Fine							
Client:	McLaren Traffic Engineering							



	From Flood St north		From Threadgold St Sth		From Flood St south			
Time Period	through	right	left	right	left	through	Total	
07:00 to 07:15	45	0	1	1	1	41	89	
07:15 to 07:30	55	1	2	1	1	37	97	
07:30 to 07:45	44	2	2	3	2	53	106	
07:45 to 08:00	56	1	3	2	0	40	102	
08:00 to 08:15	61	3	2	1	3	65	135	peak
08:15 to 08:30	55	2	3	2	4	58	124	
08:30 to 08:45	57	4	1	1	6	44	113	
08:45 to 09:00	61	3	1	2	3	56	126	
09:00 to 09:15	41	3	0	1	2	65	112	
09:15 to 09:30	45	1	2	0	2	65	115	
09:30 to 09:45	42	0	2	1	0	68	113	
09:45 to 10:00	51	2	1	1	1	52	108	
Total	613	22	20	16	25	644		
Hourly summary								
07:00 to 08:00	200	4	8	7	4	171	394	
07:15 to 08:15	216	7	9	7	6	195	440	
07:30 to 08:30	216	8	10	8	9	216	467	
07:45 to 08:45	229	10	9	6	13	207	474	
08:00 to 09:00	234	12	7	6	16	223	498	peak hour
08:15 to 09:15	214	12	5	6	15	223	475	
08:30 to 09:30	204	11	4	4	13	230	466	
08:45 to 09:45	189	7	5	4	7	254	466	
09:00 to 10:00	179	6	5	3	5	250	448	

ANNEXURE B: TRAFFIC SURVEY (Sheet 12 of 20)

Curtis Traffic Surveys	Turning movement count							
Job:	120904mcl(072)							
Day, date	13/09/12							
Location:	Flood St & Lords Rd							
Weather:	Fine							
Client:	McLaren Traffic Engineering							

N

Peak Hour Volumes: 209, 120

290 125
107 165

	From Flood St north		From Lords Rd		From Flood St south			
Time Period	through	right	left	right	left	through	Total	
07:00 to 07:15	27	12	36	13	7	40	135	
07:15 to 07:30	33	12	32	23	4	26	130	
07:30 to 07:45	19	12	28	26	9	21	115	
07:45 to 08:00	25	11	34	28	5	19	122	
08:00 to 08:15	34	21	32	31	6	26	150	
08:15 to 08:30	28	41	41	32	10	25	177	
08:30 to 08:45	31	62	56	28	12	21	210	
08:45 to 09:00	39	87	69	36	13	27	271	
09:00 to 09:15	33	88	47	29	31	45	273	peak
09:15 to 09:30	28	59	51	27	28	41	234	
09:30 to 09:45	25	56	42	28	35	52	238	
09:45 to 10:00	35	54	39	21	29	41	219	
Total	357	515	507	322	189	384		
Hourly summary								
07:00 to 08:00	104	47	130	90	25	106	502	
07:15 to 08:15	111	56	126	108	24	92	517	
07:30 to 08:30	106	85	135	117	30	91	564	
07:45 to 08:45	118	135	163	119	33	91	659	
08:00 to 09:00	132	211	198	127	41	99	808	
08:15 to 09:15	131	278	213	125	66	118	931	
08:30 to 09:30	131	296	223	120	84	134	988	
08:45 to 09:45	125	290	209	120	107	165	1016	peak hour
09:00 to 10:00	121	257	179	105	123	179	964	

ANNEXURE B: TRAFFIC SURVEY (Sheet 13 of 20)

Curtis Traffic Surveys	Turning movement count									
Job:	120904mcl(072)					Peak Hour Volumes	113	0	160	0
Day, date	13/09/12						2973			1937
Location:	Parramatta Rd & Tebbutt St									
Weather:	Fine									
Client:	McLaren Traffic Engineering									
	From Parramatta Rd east		From Tebbutt St		From Parramatta Rd west					
Time Period	through	right	left	right	left	through	Total			
07:00 to 07:15	386	0	32	0	18	649	1085			
07:15 to 07:30	390	0	35	0	19	689	1133			
07:30 to 07:45	409	0	38	0	22	843	1312			
07:45 to 08:00	539	0	37	0	26	710	1312			
08:00 to 08:15	580	0	47	0	30	737	1394	peak		
08:15 to 08:30	409	0	38	0	35	683	1165			
08:30 to 08:45	504	0	42	0	34	690	1270			
08:45 to 09:00	460	0	35	0	25	542	1062			
09:00 to 09:15	549	0	32	0	22	617	1220			
09:15 to 09:30	409	0	28	0	25	703	1165			
09:30 to 09:45	404	0	32	0	32	692	1160			
09:45 to 10:00	352	0	29	0	26	665	1072			
Total	5391	0	425	0	314	8220				
Hourly summary										
07:00 to 08:00	1724	0	142	0	85	2891	4842			
07:15 to 08:15	1918	0	157	0	97	2979	5151			
07:30 to 08:30	1937	0	160	0	113	2973	5183	peak hour		
07:45 to 08:45	2032	0	164	0	125	2820	5141			
08:00 to 09:00	1953	0	162	0	124	2652	4891			
08:15 to 09:15	1922	0	147	0	116	2532	4717			
08:30 to 09:30	1922	0	137	0	106	2552	4717			
08:45 to 09:45	1822	0	127	0	104	2554	4607			
09:00 to 10:00	1714	0	121	0	105	2677	4617			

ANNEXURE B: TRAFFIC SURVEY (Sheet 14 of 20)

Curtis Traffic Surveys	Turning movement count											
Job:	120904mcl(072)				N	Peak Hour Volumes	15		0	3		
Day, date	13/09/12						3130					1937
Location:	Parramatta Rd & Upward St											
Weather:	Fine											
Client:	McLaren Traffic Engineering											
		From Parramatta Rd east		From Upward St		From Parramatta Rd west						
Time Period		through	right	left	right	left	through	Total				
07:00 to 07:15		386	0	0	0	2	681	1069				
07:15 to 07:30		390	0	0	0	3	724	1117				
07:30 to 07:45		409	0	1	0	4	880	1294				
07:45 to 08:00		539	0	1	0	2	746	1288				
08:00 to 08:15		580	0	0	0	4	784	1368	peak			
08:15 to 08:30		409	0	1	0	5	720	1135				
08:30 to 08:45		504	0	0	0	2	732	1238				
08:45 to 09:00		460	0	0	0	2	577	1039				
09:00 to 09:15		549	0	0	0	2	649	1200				
09:15 to 09:30		409	0	0	0	1	731	1141				
09:30 to 09:45		404	0	0	0	3	724	1131				
09:45 to 10:00		352	0	0	0	1	694	1047				
Total		5391	0	3	0	31	8642					
Hourly summary												
07:00 to 08:00		1724	0	2	0	11	3031	4768				
07:15 to 08:15		1918	0	2	0	13	3134	5067				
07:30 to 08:30		1937	0	3	0	15	3130	5085	peak hour			
07:45 to 08:45		2032	0	2	0	13	2982	5029				
08:00 to 09:00		1953	0	1	0	13	2813	4780				
08:15 to 09:15		1922	0	1	0	11	2678	4612				
08:30 to 09:30		1922	0	0	0	7	2689	4618				
08:45 to 09:45		1822	0	0	0	8	2681	4511				
09:00 to 10:00		1714	0	0	0	7	2798	4519				

ANNEXURE B: TRAFFIC SURVEY (Sheet 15 of 20)

Curtis Traffic Surveys	Turning movement count				Peak Hour Volumes				
Job:	120904mcl(072)		N			17	0	3	0
Day, date	13/09/12					3116			1937
Location:	Parramatta Rd & George St								
Weather:	Fine								
Client:	McLaren Traffic Engineering								

	From Parramatta Rd east		From George St		From Parramatta Rd west			
Time Period	through	right	left	right	left	through	Total	
07:00 to 07:15	386	0	1	0	4	677	1068	
07:15 to 07:30	390	0	0	0	3	721	1114	
07:30 to 07:45	409	0	0	0	8	873	1290	
07:45 to 08:00	539	0	2	0	1	746	1288	
08:00 to 08:15	580	0	1	0	4	780	1365	peak
08:15 to 08:30	409	0	0	0	4	717	1130	
08:30 to 08:45	504	0	1	0	2	730	1237	
08:45 to 09:00	460	0	0	0	1	576	1037	
09:00 to 09:15	549	0	0	0	1	648	1198	
09:15 to 09:30	409	0	0	0	1	730	1140	
09:30 to 09:45	404	0	0	0	0	724	1128	
09:45 to 10:00	352	0	0	0	0	694	1046	
Total	5391	0	5	0	29	8616		
Hourly summary								
07:00 to 08:00	1724	0	3	0	16	3017	4760	
07:15 to 08:15	1918	0	3	0	16	3120	5057	
07:30 to 08:30	1937	0	3	0	17	3116	5073	peak hour
07:45 to 08:45	2032	0	4	0	11	2973	5020	
08:00 to 09:00	1953	0	2	0	11	2803	4769	
08:15 to 09:15	1922	0	1	0	8	2671	4602	
08:30 to 09:30	1922	0	1	0	5	2684	4612	
08:45 to 09:45	1822	0	0	0	3	2678	4503	
09:00 to 10:00	1714	0	0	0	2	2796	4512	

ANNEXURE B: TRAFFIC SURVEY (Sheet 16 of 20)

Curtis Traffic Surveys

Turning movement count

Job: 120904mcl(072)

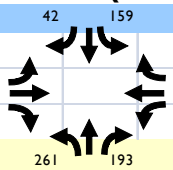
Day, date: Thu 13 Sep 12

Location: West St, Flood St & Parramatta Rd

Weather: Fine

Client: McLaren Traffic Engineering

All motor vehicles



Time Period	From Flood St			From Parramatta Rd west			From West St			From Parramatta Rd east			Total vehicle movements	
	left	through	right	left	through	right	left	through	right	left	through	right		
07:00 to 07:15	5	35	12	8	568	102	62	29	1	3	312	0	1137	
07:15 to 07:30	6	36	13	7	629	85	69	31	1	2	308	0	1187	
07:30 to 07:45	6	44	10	17	723	133	66	47	1	1	333	0	1381	
07:45 to 08:00	9	38	11	7	605	136	81	36	1	4	447	0	1375	
08:00 to 08:15	7	37	10	16	628	137	62	56	1	7	508	0	1469	Peak
08:15 to 08:30	36	40	11	8	580	129	52	54	1	3	346	0	1260	
08:30 to 08:45	5	23	15	21	569	141	70	57	1	1	419	0	1322	
08:45 to 09:00	8	23	13	7	464	105	52	55	0	6	395	0	1128	
09:00 to 09:15	10	34	8	5	514	129	54	67	1	10	487	0	1319	
09:15 to 09:30	3	16	14	6	580	144	58	46	1	7	337	0	1212	
09:30 to 09:45	2	25	8	5	582	137	75	48	2	6	321	0	1211	
09:45 to 10:00	6	28	10	4	562	128	38	38	2	4	304	0	1124	
Totals	103	379	135	111	7004	1506	739	564	13	54	4517	0		
07:00 to 08:00	26	153	46	39	2525	456	278	143	4	10	1400	0	3705	
07:15 to 08:15	28	155	44	47	2585	491	278	170	4	14	1596	0	3943	
07:30 to 08:30	58	159	42	48	2536	535	261	193	4	15	1634	0	4225	Peak Hour
07:45 to 08:45	57	138	47	52	2382	543	265	203	4	15	1720	0	4104	
08:00 to 09:00	56	123	49	52	2241	512	236	222	3	17	1668	0	4051	
08:15 to 09:15	59	120	47	41	2127	504	228	233	3	20	1647	0	3710	
08:30 to 09:30	26	96	50	39	2127	519	234	225	3	24	1638	0	3769	
08:45 to 09:45	23	98	43	23	2140	515	239	216	4	29	1540	0	3659	
09:00 to 10:00	21	103	40	20	2238	538	225	199	6	27	1449	0	3742	

ANNEXURE B: TRAFFIC SURVEY (Sheet 17 of 20)

Curtis Traffic Surveys

Turning movement count

Job: 120904mcl(072)

Day, date: Thu 13 Sep 12

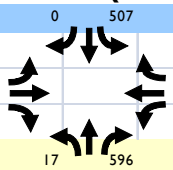
Location: Lords Rd, Foster St & Tebbutt St

Weather: Fine

Client: McLaren Traffic Engineering

All motor vehicles

Peak Hour



Time Period	From Foster St			From Lords Rd west			From Tebbutt St			From Lords Rd east			Total vehicle movements	
	left	through	right	left	through	right	left	through	right	left	through	right		
07:00 to 07:15	14	120	0	1	3	0	2	190	60	11	2	8	411	
07:15 to 07:30	30	95	0	0	3	2	0	164	46	8	3	7	358	
07:30 to 07:45	28	132	0	7	15	5	1	176	56	15	5	10	450	
07:45 to 08:00	41	82	0	2	2	0	2	115	39	8	7	3	301	
08:00 to 08:15	54	41	0	3	6	4	3	143	77	13	11	7	362	
08:15 to 08:30	60	94	0	6	4	3	8	99	64	19	9	3	369	
08:30 to 08:45	53	114	0	3	9	3	8	160	80	21	3	9	463	
08:45 to 09:00	61	127	0	10	6	3	2	147	83	20	16	13	488	
09:00 to 09:15	80	141	0	6	10	4	6	171	80	27	21	15	561	Peak
09:15 to 09:30	79	125	0	5	15	7	1	118	61	37	14	24	486	
09:30 to 09:45	56	108	3	5	5	1	5	143	38	22	5	23	414	
09:45 to 10:00	47	104	0	4	4	2	3	123	41	19	4	18	369	
Totals	603	1283	3	52	82	34	41	1749	725	220	100	140		
07:00 to 08:00	113	429	0	10	23	7	5	645	201	42	17	28	1520	
07:15 to 08:15	153	350	0	12	26	11	6	598	218	44	26	27	1471	
07:30 to 08:30	183	349	0	18	27	12	14	533	236	55	32	23	1482	
07:45 to 08:45	208	331	0	14	21	10	21	517	260	61	30	22	1495	
08:00 to 09:00	228	376	0	22	25	13	21	549	304	73	39	32	1682	
08:15 to 09:15	254	476	0	25	29	13	24	577	307	87	49	40	1881	
08:30 to 09:30	273	507	0	24	40	17	17	596	304	105	54	61	1998	Peak Hour
08:45 to 09:45	276	501	3	26	36	15	14	579	262	106	56	75	1949	
09:00 to 10:00	262	478	3	20	34	14	15	555	220	105	44	80	1830	

ANNEXURE B: TRAFFIC SURVEY (Sheet 18 of 20)

Curtis Traffic Surveys

Turning movement count

Job: 120904mcl(072)

Day, date: Thu 13 Sep 12

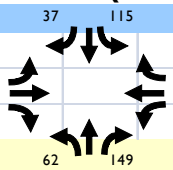
Location: Marion St & Flood St

Weather: Fine

Client: McLaren Traffic Engineering

All motor vehicles

Peak Hour: 37 115 12 / 46 / 14 / 912 / 257 / 74 / 114 / 62 149 195



Time Period	From Flood St north			From Marion St west			From Flood St south			From Marion St east			Total vehicle movements	
	left	through	right	left	through	right	left	through	right	left	through	right		
07:00 to 07:15	2	14	9	9	232	15	5	27	39	6	58	3	419	
07:15 to 07:30	2	16	12	4	275	19	7	24	55	4	70	8	496	
07:30 to 07:45	2	11	10	11	240	7	9	27	45	9	45	2	418	
07:45 to 08:00	5	18	12	9	201	14	7	23	48	22	84	0	443	
08:00 to 08:15	2	21	15	18	292	20	8	39	47	17	73	7	559	Peak
08:15 to 08:30	1	25	7	8	206	12	18	39	43	24	49	1	433	
08:30 to 08:45	6	24	6	9	236	24	17	36	58	32	73	5	526	
08:45 to 09:00	3	45	9	11	178	18	19	35	47	41	62	1	469	
09:00 to 09:15	3	48	6	10	169	27	15	32	54	55	72	5	496	
09:15 to 09:30	8	25	7	8	122	25	23	35	44	63	76	10	446	
09:30 to 09:45	2	18	10	3	150	19	11	20	57	39	46	2	377	
09:45 to 10:00	1	22	9	4	132	16	10	19	42	43	52	4	354	
Totals	37	287	112	104	2433	216	149	356	579	355	760	48		
07:00 to 08:00	11	59	43	33	948	55	28	101	187	41	257	13	1776	
07:15 to 08:15	11	66	49	42	1008	60	31	113	195	52	272	17	1916	
07:30 to 08:30	10	75	44	46	939	53	42	128	183	72	251	10	1853	
07:45 to 08:45	14	88	40	44	935	70	50	137	196	95	279	13	1961	
08:00 to 09:00	12	115	37	46	912	74	62	149	195	114	257	14	1987	Peak Hour
08:15 to 09:15	13	142	28	38	789	81	69	142	202	152	256	12	1924	
08:30 to 09:30	20	142	28	38	705	94	74	138	203	191	283	21	1937	
08:45 to 09:45	16	136	32	32	619	89	68	122	202	198	256	18	1788	
09:00 to 10:00	14	113	32	25	573	87	59	106	197	200	246	21	1673	

ANNEXURE B: TRAFFIC SURVEY (Sheet 19 of 20)

Curtis Traffic Surveys

Turning movement count

Job: 120904mcl(072)

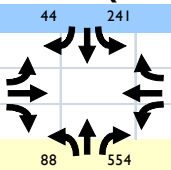
Day, date: Thu 13 Sep 12

Location: Marion St & Foster St

Weather: Fine

Client: McLaren Traffic Engineering

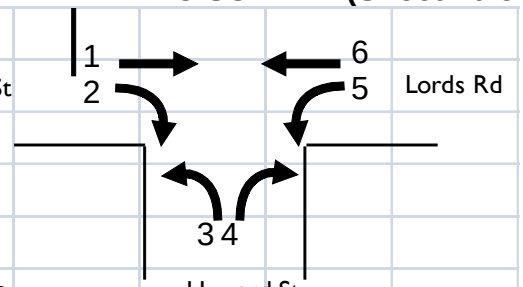
All motor vehicles



Time Period	From Foster St north			From Marion St west			From Foster St south			From Marion St east			Total vehicle movements	
	left	through	right	left	through	right	left	through	right	left	through	right		
07:00 to 07:15	4	42	7	41	201	47	23	125	18	15	53	0	576	
07:15 to 07:30	4	59	11	40	265	69	17	161	17	19	75	0	737	
07:30 to 07:45	3	56	7	53	263	68	18	148	13	20	82	0	731	
07:45 to 08:00	4	57	18	41	265	80	24	107	28	21	72	0	717	
08:00 to 08:15	5	69	8	52	255	99	29	138	29	19	66	0	769	Peak
08:15 to 08:30	3	60	11	45	249	79	20	82	17	16	65	0	647	
08:30 to 08:45	3	76	20	45	189	74	31	120	22	26	65	0	671	
08:45 to 09:00	7	58	9	46	192	90	35	136	15	20	62	0	670	
09:00 to 09:15	4	44	8	30	132	68	24	120	25	22	71	0	548	
09:15 to 09:30	8	78	27	48	128	77	35	151	27	26	62	0	667	
09:30 to 09:45	7	47	9	21	129	68	36	94	36	30	52	0	529	
09:45 to 10:00	0	38	6	24	118	53	29	71	16	15	51	0	421	
Totals	52	684	141	486	2386	872	321	1453	263	249	776	0		
07:00 to 08:00	15	214	43	175	994	264	82	541	76	75	282	0	2761	
07:15 to 08:15	16	241	44	186	1048	316	88	554	87	79	295	0	2954	Peak Hour
07:30 to 08:30	15	242	44	191	1032	326	91	475	87	76	285	0	2864	
07:45 to 08:45	15	262	57	183	958	332	104	447	96	82	268	0	2804	
08:00 to 09:00	18	263	48	188	885	342	115	476	83	81	258	0	2757	
08:15 to 09:15	17	238	48	166	762	311	110	458	79	84	263	0	2536	
08:30 to 09:30	22	256	64	169	641	309	125	527	89	94	260	0	2556	
08:45 to 09:45	26	227	53	145	581	303	130	501	103	98	247	0	2414	
09:00 to 10:00	19	207	50	123	507	266	124	436	104	93	236	0	2165	

ANNEXURE B: TRAFFIC SURVEY (Sheet 20 of 20)

Day, date	13/09/12
Location:	Lords Rd & Upward St
Weather:	Fine
Surveyor	



Time Start	All motor vehicles					
7:00	1	2	3	4	5	6
07:15	72	5	1	3	1	20
07:30	72	7	2	3	4	16
07:45	91	8	2	1	2	28
08:00	73	9	0	2	3	18
08:15	132	5	2	1	2	29
08:30	128	4	1	1	0	30
08:45	137	5	1	1	0	32
09:00	149	1	2	0	0	47
09:15	169	1	0	1	0	63
09:30	153	2	1	0	2	74
09:45	98	1	1	1	1	49
10:00	91	1	0	0	1	41

ANNEXURE C: PARKING SURVEY (SHEET 1 OF 3)

Curtis Traffic Surveys

Job:	120904mcl
Client:	McLaren Traffic Engineering
Day, date	13/09/12
Location:	Leichhardt
Weather:	Fine
Surveyor	

							Parking round commencing...					
Zone	Street	From	To	Side of Street	Capacity	Restriction	7:00	7:30	8:00	8:30	9:00	9:30
a	Tebbutt St	Parramatta Rd	Hathern St	west	3	u	4	5	4	5	4	4
b	Tebbutt St	Parramatta Rd	opp Kegworth	east	39	38u+1dis	25	28	28	33	38	37
c	Tebbutt St	Hathern St	Beeson St	west	9	u	7	6	6	9	8	8
d	Tebbutt St	Beeson St	Kegworth St	west	13	u	10	12	10	10	12	12
e	Tebbutt St	Kegworth St	Lords Rd	west	9	np1	0	0	0	0	0	1
f	Tebbutt St	opp Kegworth	Lords Rd	east	16	7*np2+9u	1	1	1	2	5	4
g	Foster St	Lords Rd	Marion St	west	14	10u+4*1p(std)	8	8	8	7	8	9
h	Foster St	Lords Rd	Marion St	east	12	2*np(std)+10u	4	4	5	6	6	6
I	Marion St	Foster St	Burfett St	north	9	ns1	0	0	0	0	0	3
j	Marion St	Foster St	Flood St	south	15	11*1/2p 8:30am-3:30pm M-F, std Sats +3*ns2+1dis1	7	11	8	12	15	12
k	Marion St	Burfitt St	Flood St	north	8	ns1	0	0	0	0	0	5
l	Flood St	Marion St	opp Lords Rd	east	17	u	14	16	16	15	17	16
m	Flood St	Marion St	Lords Rd	west		tz, ns	0	0	2	2	0	0
n	Flood St	lane	Myrtle St	east	4	u	4	3	4	3	2	2
o	Flood St	Lords Rd	Threadgold St Nth	west	15	u	8	9	8	6	7	8
p	Flood St	Myrtle St	lane	east	3	u	2	1	2	2	2	2
q	Flood St	lane	lane	east	15	u	18	15	14	17	20	20
r	Flood St	Threadgold St Nth	Threadgold St Sth	west	9	u	8	8	8	8	8	7
s	Flood St	Threadgold St Sth	Parramatta Rd	west	24	u	23	18	15	17	26	25
t	Flood St	lane	Albert St	east	6	u	3	4	5	6	4	4
u	Flood St	Albert St	Parramatta Rd	east	6	u	2	3	2	4	5	5
v	Parramatta Rd	West St	Carrington St	south	8	clearway	0	0	0	0	0	0
w	Parramatta Rd	Carrington St	Old Canterbury Rd			bz, ns	0	0	0	0	0	0
x	Parramatta Rd	Flood St	George St	north		ns	0	0	0	0	0	0
y	Parramatta Rd	George St	Upward St	north		ns	0	0	0	0	0	0
z	Parramatta Rd	Upward St	Tebbutt St	north		ns	0	0	0	0	0	0
aa	Treadgold St S	Flood St	George St	south		np	0	0	0	0	0	0
ab	Treadgold St S	Flood St	George St	north	3	u	2	1	2	4	4	4
ac	George St	Threadgold St Sth	Threadgold St Nth	west	8	u	8	7	7	7	7	7
ad	George St	Threadgold St Nth	end	west	10	u	10	8	8	8	9	8
ae	George St	angled parking at end			3	u	2	1	1	2	2	2
af	George St	end	Threadgold St Nth	east	13	u	4	4	2	3	3	3
ag	Threadgold St	George St	Flood St	north		np	0	0	0	0	0	0
ah	Threadgold St	Flood St	George St	south	4	u	3	3	2	3	2	2
ai	George St	Threadgold St Sth	Parramatta Rd	east		np	1	0	1	0	1	0
aj	George St	Threadgold St Sth	McAleer St	west	16	8u+8*2r1	8	11	15	13	20	18
ak	George St	Parramatta Rd	McAleer St	west	4	1/2p(std)	1	2	3	4	4	4
aL	Upward St	McAleer St	Parramatta Rd	east		np	0	0	0	0	0	0
aM	Upward St	Parramatta Rd	Lords Rd	west	47	44u+2*np1+1*2r1	23	26	35	43	46	40
aN	Lords Rd	Upward St	Tebbutt St	south	2	u	1	2	2	2	2	2
aO	Lords Rd	Foster St	Flood St	north	11	6u+1dis+4bz1	4	3	2	3	4	4
ap	Lords Rd	Flood St	Upward St	south	17	16u+1dis	11	13	10	13	12	10
aq	McAleer St	George St	Upward St	south		np	0	0	0	0	0	0
ar	McAleer St	George St	Upward St	north	8	u	8	8	8	8	8	8
as	Foster Ln	all lanes behind Marketplace				np	0	0	0	1	0	1
at	George St	Threadgold St Nth			5	u	6	5	5	4	5	5
					405		240	246	249	282	316	308

ANNEXURE C: PARKING SURVEY (SHEET 2 OF 3)

Curtis Traffic Surveys

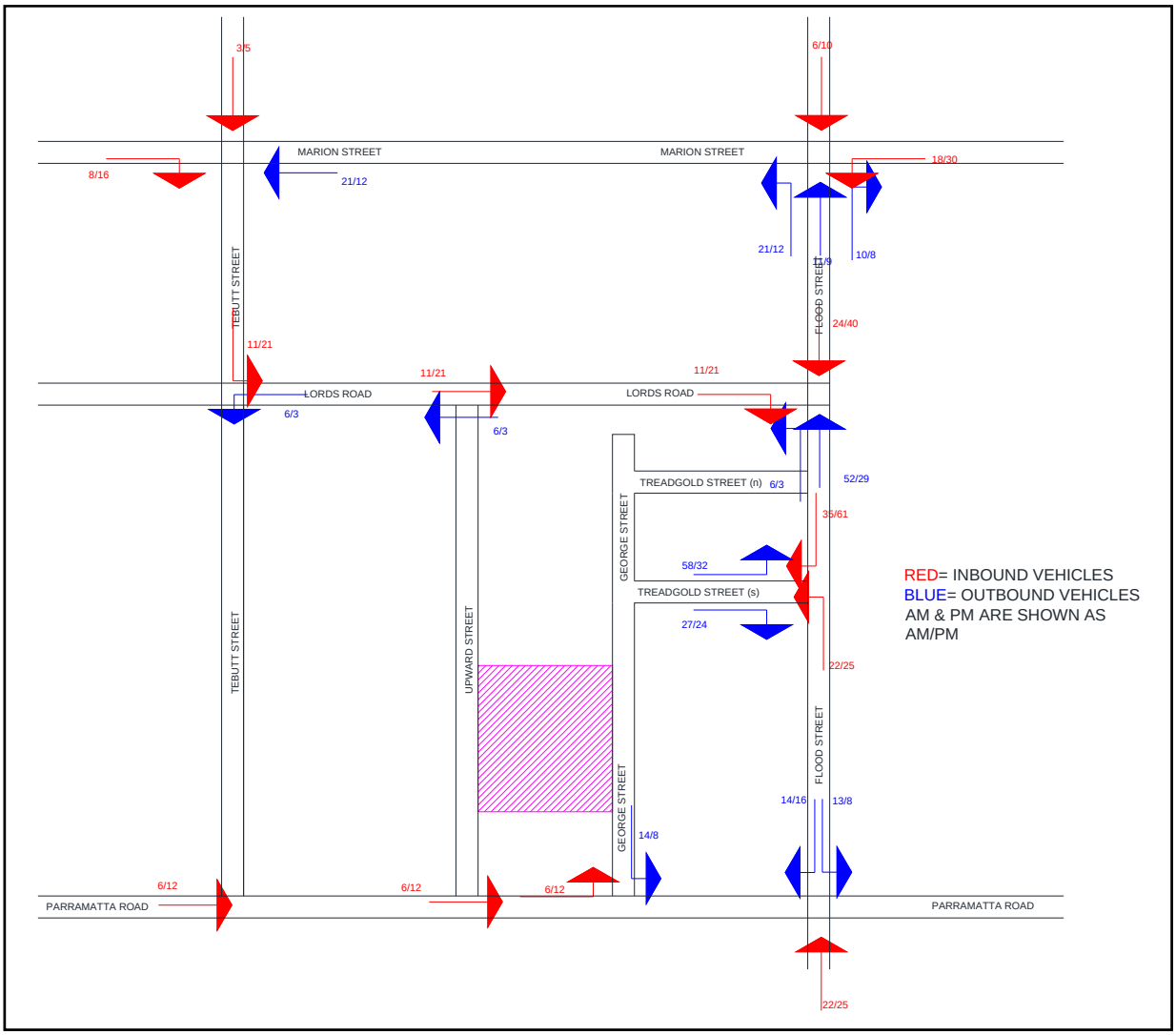
Job: 120904mcl
Client: McLaren Traffic Engineering
Day, date 13/09/12
Location: Leichhardt
Weather: Fine
Surveyor

							Parking round commencing...					
Zone	Street	From	To	Side of Street	Capacity	Restriction	16:00	16:30	17:00	17:30	18:00	18:30
a	Tebbutt St	Parramatta Rd	Hathern St	west	3	u	4	5	4	4	2	1
b	Tebbutt St	Parramatta Rd	opp Kegworth	east	39	38u+1dis	32	31	31	28	26	24
c	Tebbutt St	Hathern St	Beeson St	west	9	u	6	6	6	5	6	7
d	Tebbutt St	Beeson St	Kegworth St	west	13	u	11	11	10	10	10	9
e	Tebbutt St	Kegworth St	Lords Rd	west	9	np1	0	0	0	0	0	0
f	Tebbutt St	opp Kegworth	Lords Rd	east	16	7*np2+9u	5	4	3	4	3	4
g	Foster St	Lords Rd	Marion St	west	14	10u+4*1p(std)	12	12	11	10	12	11
h	Foster St	Lords Rd	Marion St	east	12	2*np(std)+10u	9	9	11	8	8	7
I	Marion St	Foster St	Burfett St	north	9	ns1	6	8	6	7	5	6
j	Marion St	Foster St	Flood St	south	15	11*1/2p 8:30am-3:30pm M-F, std Sats + 3*ns2+1dis1	0	0	0	0	0	0
k	Marion St	Burfitt St	Flood St	north	8	ns1	4	6	4	6	5	3
l	Flood St	Marion St	opp Lords Rd	east	17	u	16	16	17	15	16	15
m	Flood St	Marion St	Lords Rd	west		tz, ns	0	0	0	0	0	0
n	Flood St	lane	Myrtle St	east	4	u	3	3	3	2	3	4
o	Flood St	Lords Rd	Threadgold St Nth	west	15	u	12	11	11	10	8	10
p	Flood St	Myrtle St	lane	east	3	u	2	2	2	1	1	0
q	Flood St	lane	lane	east	15	u	17	17	16	16	15	14
r	Flood St	Threadgold St Nth	Threadgold St Sth	west	9	u	8	8	9	9	9	10
s	Flood St	Threadgold St Sth	Parramatta Rd	west	24	u	25	24	24	23	24	23
t	Flood St	lane	Albert St	east	6	u	5	5	5	5	4	3
u	Flood St	Albert St	Parramatta Rd	east	6	u	6	6	6	5	3	2
v	Parramatta Rd	West St	Carrington St	south	8	clearway	0	0	0	0	0	0
w	Parramatta Rd	Carrington St	Old Canterbury Rd			bz, ns	0	0	0	0	0	0
x	Parramatta Rd	Flood St	George St	north		ns	0	0	0	0	0	0
y	Parramatta Rd	George St	Upward St	north		ns	0	0	0	0	0	0
z	Parramatta Rd	Upward St	Tebbutt St	north		ns	0	0	0	0	0	0
aa	Treadgold St Sth	Flood St	George St	south		np	0	0	0	0	0	0
ab	Treadgold St Sth	Flood St	George St	north	3	u	4	4	4	2	1	0
ac	George St	Threadgold St Sth	Threadgold St Nth	west	8	u	8	7	7	8	8	11
ad	George St	Threadgold St Nth	end	west	10	u	8	8	8	8	8	9
ae	George St	angled parking at end			3	u	3	3	3	2	2	2
af	George St	end	Threadgold St Nth	east	13	u	3	3	3	4	6	8
ag	Threadgold St Nth	George St	Flood St	north		np	0	0	0	0	0	0
ah	Threadgold St Nth	Flood St	George St	south	4	u	3	3	3	3	4	4
ai	George St	Threadgold St Sth	Parramatta Rd	east		np	2	2	2	1	1	0
aj	George St	Threadgold St Sth	McAleer St	west	16	8u+8*2r1	20	20	18	15	11	6
ak	George St	Parramatta Rd	McAleer St	west	4	1/2p(std)	3	3	3	2	3	4
aL	Upward St	McAleer St	Parramatta Rd	east		np	0	1	0	0	0	0
aM	Upward St	Parramatta Rd	Lords Rd	west	47	44u+2*np1+1*2r1	49	48	45	35	24	20
aN	Lords Rd	Upward St	Tebbutt St	south	2	u	2	2	2	2	2	2
aO	Lords Rd	Foster St	Flood St	north	11	6u+1dis+4bz1	5	5	6	5	8	8
ap	Lords Rd	Flood St	Upward St	south	17	16u+1dis	14	14	13	13	13	12
aq	McAleer St	George St	Upward St	south		np	0	0	0	0	0	0
ar	McAleer St	George St	Upward St	north	8	u	8	8	8	5	4	2
as	Foster Ln	all lanes behind Marketplace				np	1	0	0	0	0	0
at	George St	Threadgold St Nth	Threadgold St Sth		5	u	5	5	5	5	4	4
					405		321	320	309	278	259	245

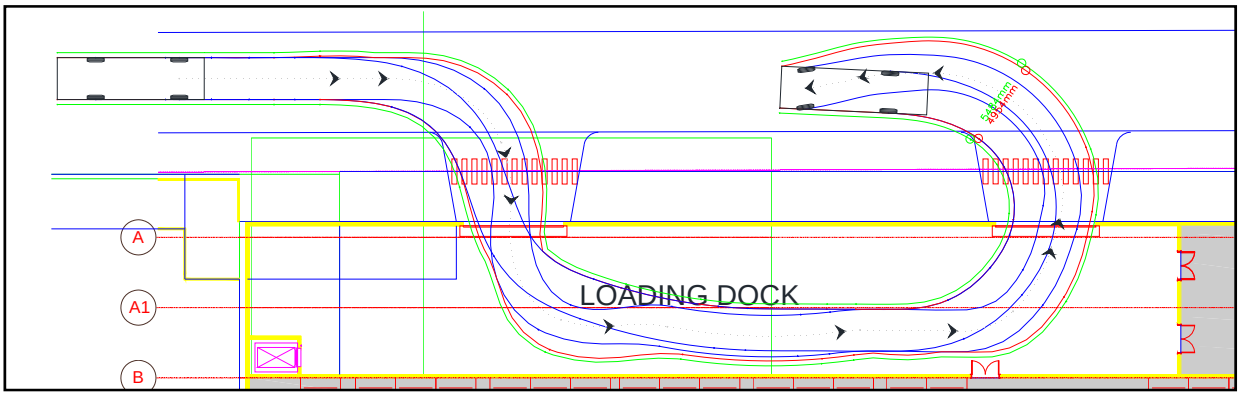
ANNEXURE C: PARKING SURVEY (SHEET 3 OF 3)

Day, date	13/09/12								
Location:	Lords Rd & Upward St								
Weather:	Fine								
Surveyor									
Time Start	All motor vehicles						Kegworth Public School drop offs		
7:00	1	2	3	4	5	6	In Upward St	in Lords Rd, West of Foster St	In Tebbutt St
07:15	72	5	1	3	1	20	0	0	0
07:30	72	7	2	3	4	16	0	0	0
07:45	91	8	2	1	2	28	0	0	0
08:00	73	9	0	2	3	18	0	1	0
08:15	132	5	2	1	2	29	0	0	0
08:30	128	4	1	1	0	30	0	5	0
08:45	137	5	1	1	0	32	0	2	2
09:00	149	1	2	0	0	47	0	7	0
09:15	169	1	0	1	0	63	0	8	3
09:30	153	2	1	0	2	74	0	7	0
09:45	98	1	1	1	1	49	0	0	0
10:00	91	1	0	0	1	41	0	0	0

ANNEXURE D: TRAFFIC ASSIGNMENT



ANNEXURE E: LOADING DOCK



8.8m Medium Rigid Vehicle
5-10kmh/h
Successful- No Stopping required opposite driveways.

ANNEXURE F: TREADGOLD INTERSECTION CONCEPT UPGRADE